

Attorney Docket No. CL001163

Application Serial No. 09/804,472

Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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1 GGTCCAGTT GCTTCAGCGA GTCGAAC TAC AGTTTTAACC TCATCAAATA  
51 GGCATCTCC CTTGCTTGCT GCAGCAGGGA TGGAAGAAAT GTCAC TTTCT  
TTTAAAGCTA GCAAGCTTTT TCTTTTCTT TTTCTTCTTC TATTTAAAAA  
151 TTCTAATCAT GGATGCTTCT TCCGACCTT ATTTGCCTTA TGACGGGGGA  
201 GGAGACAATA TTCCCTGAG GGAATTACAT AAAAGAGGAA CTCATTATAC  
251 AATGACAAAT GGAGGCAGCA TTAACAGTTC TACACATTTA CTGGATCTTT  
301 TGGATGAACC AATTCCAGGT GTTGGTACAT ATGATGATTT CCATACTATT  
351 GATTGGGTGC GAGAAAAATG TAAAGACAGA GAAAGGCATA GACGGATCAA  
401 CAGCAAAAAG AAAGAATCAG CATGGGAAAT GACAAAAAGT TTGTATGATG  
451 CGTGGTCAGG ATGGCTAGTA GTAACACTAA CAGGATTGGC ATCAGGGGCA  
501 CTGGCCGGAT TAATAGACAT TGCTGCCGAT TGGATGACTG ACCTAAAGGA  
551 GGGCATTTGC TTAGTGCGT TGTGGTACAA CCACGAACAT TGCTGTGGG  
601 GATCTAATGA AACAACATTT GAAGAGAGGG ATAAATGTCC ACAGTGAAAA  
651 ACATGGGCAG AATTAATCAT AGGTCAAGCA GAGGGTCCTG GTTCTTATAT  
701 CATGAAC TAC ATAATGTACA TCTTCTGGGC CTTGAGTTTT GCCTTTCTTG  
751 CAGTTTCCCT GGTAAGGTA TTTGCTCCAT ATGCCTGTGG CTCTGGAATT  
801 CCAGAGATTA AAATATTTT AAGTGGATTC ATCATCAGAG GTTACTTGGG  
851 AAAATGGACT TTAATGATTA AAACCATCAG ATTAGTCCTG GCTGTGGCAT  
901 CAGGTTTGAG TTTAGGAAAA GAAGGTCCCC TGGTACATGT TGCCTGTGTC  
951 TGCGGAAATA TCTTTTCCTA CCTCTTTCCA AAGTATAGCA CAAACGAAGC  
1001 TAAAAAAGG GAGGTGCTAT CAGCTGCCTC AGCTGCAGGG GTTTCTGTAG  
1051 CTTTTGGTGC ACCAATTGGA GGAGTTCTTT TTAGCCTGGA AGAGGTTAGC  
1101 TATTATTTTC CTCTCAAAAC TTTATGGAGA TCATTTTTTG CTGCTTTAGT  
1151 GGCTGCATTT GTTTTGAGGT CCATCAATCC ATTTGGTAAC AGCCGCTCTG  
1201 TCCTTTTTTA TGTGGAGTAT CATAACCAT GGTACCTTTT TGAACGTGTT  
1251 CCTTTTATTC TTCTAGGGGT ATTTGGAGGG CTTTGGGGAG CCTTTTTCAT  
1301 TAGGGCAAAT ATTGCCTGGT GTCGTCGACG CAAGTCCACG AAATTTGGAA  
1351 AGTATCCCGT TCTGGAAGTC ATTATTGTTG CAGCCATTAC TGCTGTGATA  
1401 GCCTTCCCTA ATCCATACAC TAGGCTAAAC ACCAGTGAAC TGATCAAAGA  
1451 GCTTTTTACA GACTGTGGTC CCCTGGAATC CTCTTCTCTT TGTGACTACA  
1501 GAAATGACAT GAATGCCAGT AAAATTGTCG ATGACATTCC TGATCGTCCA  
1551 GCAGGCATTG GAGTATATTC AGCTATATGG CAGTTATGCC TGGCACTCAT  
1601 ATTTAAAATC ATAATGACAG TATTCAC TTT TGGCATCAAG GTTCCATCAG  
1651 GCTTGTTTCAT CCCCAGCATG GCCATTGGAG CGATCGCAGG AAGGATTGTG  
1701 GGGATTGCGG TGGAGCAGCT TGCCTACTAT CACCACGACT GGTTTATCTT  
1751 TAAGGAGTGG TGTGAGGTCG GGGCTGATTG CATTACACCT GGCCTTTATG  
1801 CCATGGTTGG TGCTGCTGCA TGCTTAGGTG GTGTGACAAG AATGACTGTC  
1851 TCCCTGGTGG TTATTGTTT TGAGCTTACT GGAGGCTTGG AATATATTGT  
1901 TCCCTTTATG GCTGCAGTCA TGACCAGTAA ATGGGTTGGA GATGCCTTTG  
1951 GCAGGGAAGG CATTATGAA GCACACATCC GATTAAATGG ATACCCCTTC  
2001 TTGGATGCAA AAGAAGAAAT CACTCATACC ACCCTGGCTG CTGACGTTAT  
2051 GAGACCTCGA AGGAATGATC CTCCCTTAGC TGTCCTGACA CAGGACAATA  
2101 TGACAGTGGA TGATATAGAA AACATGATTA ATGAAACCAG CTACAATGGA  
2151 TTTCTGTCA TAATGTCAA AGAATCTCAG AGATTAGTGG GATTTGCCCT  
2201 CAGAAGAGAC CTGACAAATG CAATAGAAAG TGCCAGGAAA AAACAAGAAG  
2251 GTATCGTTGG CAGTTCTCGG GTGTGTTTGG CACAGCACAC CCCATCTCTT  
2301 CCAGCAGAAA GTCCTCGGCC ATTGAAGCTT CGAAGCATTC TTGACATGAG  
2351 CCCTTTTACA GTGACAGACC ACACCCCAAT GGAGATTGTG GTGGATATTT  
2401 TCCGAAAGCT GGGACTGAGG CAGTGCCTTG TAACTACAAA TGGGCGCCTC  
2451 CTTGGCATT TAACAAAAAA AGATATCCTC CGGCATATGG CCCAGACGGC  
2501 AAACCAAGAC CCCGCTTCAA TAATGTTCAA CTGAATCTCA CAGATGAGGA  
2551 GAGAGAAGAA ACGGAAGAGG AAGTTTATTT GTTGAATAGC ACAACTCTTT  
2601 AACCTGAGGG AGTCATCTAC TTTTTTTTCC TCCTTTACAA AAAAAGAAAG  
2651 GAAATATAAA AGCCGGGTTT TTGCAACATG GTTTGCAAAT AATGCTGGTG  
2701 GAATGGAGGA GTTGTTTGGG GAGGGAAGG AGAGAGAAGG AAAGGAGTGA  
2751 GGTATTTCCC GTCTAACAGA AAGCAGCGTA TCAACTCCTA TTGTCTGCA  
2801 CTGGATGCAT TCAGCTGAGG ATGTGCCTGA TAGTGCAGG TTGCGCCTCA  
2851 ACAGAGATGA CAGCAGATC CTCGAGCACC TGGCCTGTTG CTCCAACATT  
2901 GCAAAGACAC ATTATCAGTC CCTATTTCTA GAGGGATTAC TTTGAATTGA  
2951 GCCATCTATA AAATGCAAG GTCTTGCCCT TTTTTTTAAT CAAAACGTGT  
3001 CTGTTTAAAT CATGAATTGT ATAGTTAAGC ATTACCTTTC TACATTCCAG

FIGURE 1A



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051 AAGAGCCTTT ATTTCTCTCT CTCTCTCTCT CTCTCTCTCT CTCTCTACTG  
3101 AGCTGTAACA AAGCCTCTTT AAATCGGTGT ATCCTTTTGA AGCAGTCCTT  
3151 TCTCATATTG AGATGTACTG TGATTTTACT GAGGTTTCAT CACAAGAAGG  
3201 GAGTGTCTTCT TGTGCCATTA ACCATGTAGT TTGTACCATC ACTAAATGCT  
3251 TGGAACAGTA CACATGCACC ACAACAAAGG CTCATCAAAC AGGTAAAGTC  
3301 TCGAAGGAAG CGAGAACGAA ATCTCTCATT GTGTGCCGTG TGGCTCAAAA  
3351 CCGAAAACAA TGAAGCTTGG TTTTAAAGGA TAAAGTTTTC TTTTTTGTTT  
3401 TCCTCTCAGA CTTTATGGAT AATGTGACCG GGTCTTATGC AAATTTTCTA  
3451 TTTCTAAAAC TACTACTATG ATATACAAGT GCTGTTGAGC ATAATTAAAT  
3501 AAAATGCTGC TGCTTTGACA GTAAAGAGAA AAAAAAAAAA AAAAAAAAAA  
3551 AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA  
3601 AAAAAAAAAA AAAAAAAAAA AAAAA (SEQ ID NO:1)

**FEATURES:**

5'UTR: 1-158  
Start Codon: 159  
Stop Codon: 2532  
3'UTR: 2535

FIGURE 1B



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**HOLOGOUS PROTEINS:**

**Top BLAST Hits:**

						Score	E
CRA	18000005109762	/altid=gi	2599548	/def=gb	AAB95161.1	(AF029...	1575 0.0
CRA	18000005109763	/altid=gi	2599550	/def=gb	AAB95162.1	(AF029...	1573 0.0
CRA	18000005227216	/altid=gi	4762023	/def=gb	AAD29440.1	AF14277...	1572 0.0
CRA	18000004989660	/altid=gi	4502869	/def=ref	NP_001820.1	chlo...	1570 0.0
CRA	18000005231972	/altid=gi	8134363	/def=sp	Q9R279	CLC3_CAVPO ...	1561 0.0
CRA	18000004989700	/altid=gi	6680948	/def=ref	NP_031737.1	chlo...	1560 0.0
CRA	18000004978791	/altid=gi	1705905	/def=sp	P51792	CLC3_RAT CH...	1560 0.0
CRA	1000685681515	/altid=gi	6634696	/def=emb	CAA71072.2	(Y0994...	1559 0.0
CRA	18000004989661	/altid=gi	1705903	/def=sp	P51790	CLC3_HUMAN ...	1558 0.0
CRA	18000005226296	/altid=gi	4753144	/def=gb	AAB88634.2	(U8346...	1556 0.0

**EST:**

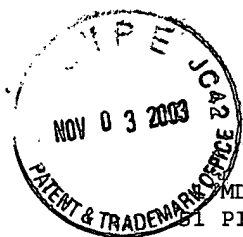
						Score	E
gi	10993825	/dataset=dbest	/taxon=96...			1562	0.0
gi	10934924	/dataset=dbest	/taxon=96...			1336	0.0
gi	10952244	/dataset=dbest	/taxon=96...			1251	0.0
gi	12383593	/dataset=dbest	/taxon=96...			1205	0.0
gi	6591096	/dataset=dbest	/taxon=9606 ...			1170	0.0
gi	10251711	/dataset=dbest	/taxon=96...			1104	0.0
gi	2321385	/dataset=dbest	/taxon=9606 ...			1045	0.0
gi	5594360	/dataset=dbest	/taxon=9606 ...			975	0.0
gi	5422132	/dataset=dbest	/taxon=9606 ...			965	0.0
gi	10327969	/dataset=dbest	/taxon=96...			963	0.0

**EXPRESSION INFORMATION FOR MODULATORY USE:**

**library source:**

gi	10993825	Neuronal precursor cells-teratocarcinoma
gi	10934924	Whole embryo-mainly head
gi	10952244	Neuronal precursor cells-teratocarcinoma
gi	12383593	Small intestine-duodenal adenocarcinoma
gi	6591096	Lung-small cell carcinoma
gi	10251711	Breast-normal
gi	2321385	Schwannoma tumor
gi	5594360	Brain-tumor
gi	5422132	Testis
gi	10327969	Lung-large cell carcinoma

FIGURE 1C



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MDASSDPYLP YDGGGDNIP L RELHKRGTHY TMTNGGSINS STHLLDLLDE  
51 PIPGVGTYYDD FHTIDWVREK CKDRERHRR I NSKKKESAW E MTKSLYDAWS  
101 GWLVVTLTGL ASGALAGLID IAADWMTDLK EGICLSALWY NHEQCCWGSN  
151 ETTFEERDKC PQWKTWAEI I GQAEGPSY IMNYIMYIFW ALSFAFLAVS  
201 LVKVFAPYAC GSGIPEIKTI LSGFIIRGYL GKWTLMIKTI TLVLAVASGL  
251 SLGKEGPLVH VACCCGNIFS YLFPKYSTNE AKKREVL SAA SAAGVSVAFG  
301 APIGGVLFSL EEVSYYFPLK TLWRSFFAAL VAAFVLRSIN PFGNSRLVLF  
351 YVEYHTPWYL FELFPFILLG VFGGLWGAF F IRANIAWCRR RKSTKFGKYP  
401 VLEVIIVAAI TAVIAFPNPY TRLNTSELIK ELFTDCGP L SSSLCDYRND  
451 MNASKIVDDI PDRPAGIGVY SAIWQLCLAL IFKIIMTVFT FGIKVP SGLF  
501 IPSMAIGAIA GRIVGIAVEQ LAYYHHDWFI FKEWCEVGAD CITPGLYAMV  
551 GAAACLGAVT RMTVSLVVIV FELTGGLEYI VPLMAAVMTS KWVGDAFGRE  
601 GIYEAHIRLN GYPFLDAKEE FTHTTLAADV MRPRRNDPPL AVLTQDNMTV  
651 DDIENTMINET SYNGFPVIMS KESQRLVGFA LRRDLTIAIE SARKKQEGIV  
701 GSSRVCF AQH TP SPLPAESPR PLKLRSILDM SPFTVTDHTP MEIVVDIFRK  
751 LGLRQCLVTH NGRLLGIITK KDILRHMAQT ANQDPASIMF N (SEQ ID NO:2)

**FEATURES:**

**Functional domains and key regions:**

[1] PDOC00001 PS00001 ASN\_GLYCOSYLATION  
N-glycosylation site

Number of matches: 5

- 1 90-93 NETT (SEQ ID NO:7)
- 2 364-367 NTSE (SEQ ID NO:8)
- 3 392-395 NASK (SEQ ID NO:9)
- 4 587-590 NMTV (SEQ ID NO:10)
- 5 598-601 NETS (SEQ ID NO:11)

[2] PDOC00004 PS00004 CAMP\_PHOSPHO\_SITE  
cAMP- and cGMP-dependent protein kinase phosphorylation site

Number of matches: 3

- 1 24-27 KKES (SEQ ID NO:12)
- 2 330-333 RRKS (SEQ ID NO:13)
- 3 331-334 RKST (SEQ ID NO:14)

[3] PDOC00005 PS00005 PKC\_PHOSPHO\_SITE  
Protein kinase C phosphorylation site

Number of matches: 8

- 1 22-24 SKK
- 2 333-335 STK
- 3 529-531 TSK
- 4 613-615 SQR
- 5 631-633 SAR
- 6 642-644 SSR
- 7 658-660 SPR
- 8 709-711 TTK

FIGURE 2A



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[4] PDOC00006 PS00006 CK2\_PHOSPHO\_SITE  
Casein kinase II phosphorylation site

Number of matches: 13

- 1 27-30 SAWE (SEQ ID NO:15)
- 2 34-37 SLYD (SEQ ID NO:16)
- 3 92-95 TTFE (SEQ ID NO:17)
- 4 93-96 TFEE (SEQ ID NO:18)
- 5 105-108 TWAE (SEQ ID NO:19)
- 6 217-220 STNE (SEQ ID NO:20)
- 7 249-252 SLEE (SEQ ID NO:21)
- 8 383-386 SLCD (SEQ ID NO:22)
- 9 589-592 TVDD (SEQ ID NO:23)
- 10 666-669 SILD (SEQ ID NO:24)
- 11 674-677 TVTD (SEQ ID NO:25)
- 12 679-682 TPME (SEQ ID NO:26)
- 13 709-712 TKKD (SEQ ID NO:27)

[5] PDOC00008 PS00008 MYRISTYL  
N-myristoylation site

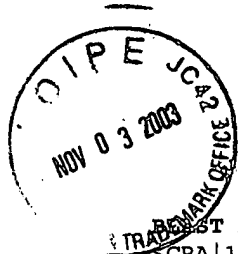
Number of matches: 18

- 1 49-54 GLASGA (SEQ ID NO:28)
- 2 53-58 GALAGL (SEQ ID NO:29)
- 3 72-77 GICLSA (SEQ ID NO:30)
- 4 88-93 GSNETT (SEQ ID NO:31)
- 5 189-194 GLSLGK (SEQ ID NO:32)
- 6 206-211 GNIFSY (SEQ ID NO:33)
- 7 234-239 GVSVAF (SEQ ID NO:34)
- 8 240-245 GAPIGG (SEQ ID NO:35)
- 9 245-250 GVLFSL (SEQ ID NO:36)
- 10 310-315 GVFGGL (SEQ ID NO:37)
- 11 313-318 GGLWGA (SEQ ID NO:38)
- 12 314-319 GLWGAF (SEQ ID NO:39)
- 13 408-413 GVYSAI (SEQ ID NO:40)
- 14 447-452 GAIAGR (SEQ ID NO:41)
- 15 491-496 GAAACL (SEQ ID NO:42)
- 16 541-546 GIYEAH (SEQ ID NO:43)
- 17 638-643 GIVGSS (SEQ ID NO:44)
- 18 692-697 GLRQCL (SEQ ID NO:45)

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	99	119	1.810	Certain
2	182	202	2.131	Certain
3	233	253	1.398	Certain
4	256	276	1.019	Certain
5	290	310	1.770	Certain
6	321	341	0.797	Putative
7	361	381	2.093	Certain
8	400	420	1.539	Certain
9	473	493	1.739	Certain
10	496	516	1.218	Certain
11	540	560	1.568	Certain
12	570	590	0.975	Putative

FIGURE 2B



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**FAST Alignment to Top Hit:**

SCRA|18000005109762 /altid=gi|2599548 /def=gb|AAB95161.1| (AF029346)  
chloride channel protein 3 [Homo sapiens] /org=Homo  
sapiens /taxon=9606 /dataset=nraa /length=818  
Length = 818

Score = 1572 bits (4026), Expect = 0.0

Identities = 764/765 (99%), Positives = 764/765 (99%)

Query: 27 GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDFHTIDWVREKCKDRERHRRINSKKKE 86  
GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDFHTIDWVREKCKDRERHRRINSKKKE  
Sbjct: 54 GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDFHTIDWVREKCKDRERHRRINSKKKE 113

Query: 87 SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC 146  
SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC  
Sbjct: 114 SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC 173

Query: 147 WGSNETTFEERDKCPQWKTWAEIIQQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA 206  
WGSNETTFEERDKCPQWKTWAEIIQQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA  
Sbjct: 174 WGSNETTFEERDKCPQWKTWAEIIQQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA 233

Query: 207 PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVLAVASGLSLGKEGPLVHVACCCG 266  
PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVLAVASGLSLGKEGPLVHVACCCG  
Sbjct: 234 PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVLAVASGLSLGKEGPLVHVACCCG 293

Query: 267 NIFSYLEPKYSTNEAKKREVLASAASAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF 326  
NIFSYLEPKYSTNEAKKREVLASAASAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF  
Sbjct: 294 NIFSYLEPKYSTNEAKKREVLASAASAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF 353

Query: 327 FAALVAAFVLR SINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGGAFFIRANIA 386  
FAALVAAFVLR SINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGGAFFIRANIA  
Sbjct: 354 FAALVAAFVLR SINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGGAFFIRANIA 413

Query: 387 WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD 446  
WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD  
Sbjct: 414 WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD 473

Query: 447 YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIMTVFTFGIKVPSGLFIPSMAI 506  
YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIMTVFTFGIKVPSGLFIPSMAI  
Sbjct: 474 YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIMTVFTFGIKVPSGLFIPSMAI 533

Query: 507 GAIAGRIVGIAVEQLAYYHHDWFIFKEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL 566  
GAIAGRIVGIAVEQLAYYHHDWFIFKEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL  
Sbjct: 534 GAIAGRIVGIAVEQLAYYHHDWFIFKEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL 593

Query: 567 VVIVFELTGGLLEYIVPLMAAVMTSKWVGDAFGREGIYEAHRLNGYPFLDAKEEFTHRTL 626  
VVIVFELTGGLLEYIVPLMAAVMTSKWVGDAFGREGIYEAHRLNGYPFLDAKEEFTHRTL  
Sbjct: 594 VVIVFELTGGLLEYIVPLMAAVMTSKWVGDAFGREGIYEAHRLNGYPFLDAKEEFTHRTL 653

Query: 627 AADVMRPLRNDPPLAVLTQDNMTVDDIENMINETS YNGFPVIMSKESQRLVGFALRRDLT 686  
AADVMRPLRNDPPLAVLTQDNMTVDDIENMINETS YNGFPVIMSKESQRLVGFALRRDLT  
Sbjct: 654 AADVMRPLRNDPPLAVLTQDNMTVDDIENMINETS YNGFPVIMSKESQRLVGFALRRDLT 713

Query: 687 IAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIVVD 746  
IAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIVVD  
Sbjct: 714 IAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIVVD 773

Query: 747 IFRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN 791  
IFRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN  
Sbjct: 774 IFRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN 818 (SEQ ID NO:4)

FIGURE 2C



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>CRA|18000004989660 /altid=gi|4502869 /def=ref|NP\_001820.1| chloride  
channel 3; ClC-3 [Homo sapiens] /org=Homo sapiens  
/taxon=9606 /dataset=nraa /length=820  
Length = 820

Score = 1567 bits (4013), Expect = 0.0

Identities = 764/767 (99%), Positives = 764/767 (99%), Gaps = 2/767 (0%)

Query: 27 GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDDFHTIDWVREKCKDRERHRRINSKKKE 86  
GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDDFHTIDWVREKCKDRERHRRINSKKKE  
Sbjct: 54 GTHYMTNGGSINSSTHLLDLLDEPIPGVGTYYDDFHTIDWVREKCKDRERHRRINSKKKE 113

Query: 87 SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC 146  
SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC  
Sbjct: 114 SAWEMTKSLYDAWSGWLVTTLTGLASGALAGLIDIAADWMTDLKEGICLSALWYNHEQCC 173

Query: 147 WGSNETTFEERDKCPQWKTAELIIGQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA 206  
WGSNETTFEERDKCPQWKTAELIIGQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA  
Sbjct: 174 WGSNETTFEERDKCPQWKTAELIIGQAEGPGSYIMNYIMYIFWALSFAFLAVSLVKVFA 233

Query: 207 PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVAVASGLSLGKEGPLVHVACCCG 266  
PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVAVASGLSLGKEGPLVHVACCCG  
Sbjct: 234 PYACGSGIPEIKTILSGFIIRGYLGKWTLMIKTITLVAVASGLSLGKEGPLVHVACCCG 293

Query: 267 NIFSYPFKYSTNEAKKREVLSAASAAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF 326  
NIFSYPFKYSTNEAKKREVLSAASAAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF  
Sbjct: 294 NIFSYPFKYSTNEAKKREVLSAASAAGVSVAFGAPIGGVLFSLSEVSYFFPLKTLWRSF 353

Query: 327 FAALVAAFVLRINSINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGAFIRANIA 386  
FAALVAAFVLRINSINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGAFIRANIA  
Sbjct: 354 FAALVAAFVLRINSINPFGNSRLVLFYVEYHTPWYLFELFPFILLGVFGGLWGAFIRANIA 413

Query: 387 WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD 446  
WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD  
Sbjct: 414 WCRRRKSTKFGKYPVLEVIIVAAITAVIAFPNPYTRLNTSELIKELFTDCGPLESSSLCD 473

Query: 447 YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIIMTVFTFGIKVPSGLFIPSMIAI 506  
YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIIMTVFTFGIKVPSGLFIPSMIAI  
Sbjct: 474 YRNDMNASKIVDDIPDRPAGIGVSAIWQLCLALIFKIIIMTVFTFGIKVPSGLFIPSMIAI 533

Query: 507 GAIAGRIVGIAVEQLAYYHHDWFIKFEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL 566  
GAIAGRIVGIAVEQLAYYHHDWFIKFEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL  
Sbjct: 534 GAIAGRIVGIAVEQLAYYHHDWFIKFEWCEVGADCITPGLYAMVGAAACLGGVTRMTVSL 593

Query: 567 VVIVFELTGGLEYIVPLMAAVMTSKWVGDAFGREGIYEAHIRLNGYPFLDAKE--EFTHT 624  
VVIVFELTGGLEYIVPLMAAVMTSKWVGDAFGREGIYEAHIRLNGYPFLDAKE EFTHT  
Sbjct: 594 VVIVFELTGGLEYIVPLMAAVMTSKWVGDAFGREGIYEAHIRLNGYPFLDAKEEFTHT 653

Query: 625 TLAADVMRPLRNDPPLAVLTQDNMTVDDIENMINETSYNFGFPVIMSKESQRLVGFALRRD 684  
TLAADVMRP RNDPPLAVLTQDNMTVDDIENMINETSYNFGFPVIMSKESQRLVGFALRRD  
Sbjct: 654 TLAADVMRPRRNDPPLAVLTQDNMTVDDIENMINETSYNFGFPVIMSKESQRLVGFALRRD 713

Query: 685 LTIAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIV 744  
LTIAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIV  
Sbjct: 714 LTIAIESARKKQEGIVGSSRVCFAQHTPSLPAESPRPLKLSILDMSPTVTDHTPMEIV 773

Query: 745 VDI FRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN 791  
VDI FRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN  
Sbjct: 774 VDI FRKLGLRQCLVTHNGRLLGIITKKDILRHMAQTANQDPASIMFN 820 (SEQ ID NO:5)

FIGURE 2D

Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.  
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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>CRA|1000685681515 /altid=gi|6634696 /def=emb|CAA71072.2| (Y09941)
      putative chloride channel ClC-3 [Xenopus laevis]
      /org=Xenopus laevis /taxon=8355 /dataset=nraa
      /length=791
      Length = 791
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Score = 1559 bits (3993), Expect = 0.0  
Identities = 745/791 (94%), Positives = 771/791 (97%)

```
Query: 1 MDASSDPYLPYDGGGDNIPLRELHKGTHYTMNGGSINSSTHLLDLLDEPIPGVGTYYDD 60
      MD SSDPYLPYDGGGDNIPLR+LHKGTHYT+TNGG+INS+THLLDLLDEPIPGVGTYYDD
Sbjct: 1 MDISSDPYLPYDGGGDNIPLRDLHKGTHYTVTNGGAINSTTHLLDLLDEPIPGVGTYYDD 60
      (SEQ ID NO:6)
```

**Hmmer search results (Pfam):**

Model	Description	Score	E-value	N
CE00039	CE00039 chloride_channel	1671.9	0	1
CE00420	E00420 CLC	1288.1	0	2
PF00654	Voltage gated chloride channels	1172.4	0	1
PF00571	CBS domain	78.1	7e-20	2

**Parsed for domains:**

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00654	1/1	71	622 ..	1	621 []	1172.4	0
PF00571	1/2	645	690 ..	11	54 .]	31.4	5.8e-07
CE00420	1/2	32	697 ..	1	729 [.	1174.4	0
PF00571	2/2	726	778 ..	1	54 []	47.4	2.2e-11
CE00420	2/2	722	791 .]	867	942 ..	110.6	6.5e-32
CE00039	1/1	60	791 .]	1	804 []	1671.9	0

FIGURE 2E



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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151 TGCTGACTGT CATTTCATT CTTTATGATC AAGTTGTAGA TCAGGAAAAA
201 CAAGTTAAGA GAGTGCCTAC AAATACCGG AAAACTTGTG GATAGATTTT
251 CATTTTTTTAT GTAAAGACAT ATAAGAACAT GAATGGTATA AAAACAAAAT
301 CCTTTATAAA TGCCATACAA TTATATATTT AGAAAAATTA TATGGTGGTA
351 AAACATATAA AAGAACCACA CACTCCCAA TTTACATTGA GCTAATTAG
401 TACAGTTAGC CTTTGTCAA GCTTTCCTTG TTTAAAAAAA CTATTGGCTC
451 AGTGTGCAGG AAGGAGCATA GGAGAAAAA TTGCCAAGAA TATTTGAAAA
501 ATACAGAAAA TAAAGAAAA AATCACCTAC TATCCTATCA AAAATTTTAA
551 TAGCTAGAAT CAGGATAAGA TAGAATATTC CTGTGGCAGT AATTCTAGTC
601 TATATTCCTT TCCTGGAACC CTGTCTCCCA AATTTCAGGT GAGATTTTAT
651 AAGAAGCTCT GTTTATCTGA GATTTAAAAT ATAAAACTT GATTTAACCT
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951 TTGTTTAGTG ACACGTGTGA ACAGGCATT CAGGAGGAGA ATCTCCAGT
1001 CTAGAGGAAT CCTCTCAGAG GTAGCTATAA AATATTGAAC TCTGATCTTC
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1201 GACACATTTT TGCTAAAAGT TAAAAACACA AAACCCTTAT GAGATAAAAT
1251 AGGAAGCTAG TAGAGATAGG AAAGTCCTCT GCTTAGTAAA CCTCTTTTTT
1301 GCGTAGTTTA GACACATACA ATAGTAAAGT TACTTAGTAC GTTGATAGTT
1351 TTCTTTCTCC TCAAAAGCTA CAATGTCTTA CTAGCTAGTT CCTTCAAGAA
1401 AGGAAACAAG AAGCCGCTGG AGGAGATTGG TGAGTGGGAT AAAACACTAT
1451 TCAACTCTTC AGTTATTCGG TTTTAAATC CTCAATGAAA GGCTGCTGTA
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1701 GCATTCAAAA TTTCTTTT ACATCTCTGT ATTACTTTT CCCCTTTATA
1751 TTTATCTTAA AACCAAAAGA AATAATGTTT CTATTGTTT ACTGTAGTTA
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1851 AGTTTTGTGT GTTTTTTTT GAGCTTAGTC ATTGTCATAC GTAGCAGGAC
1901 CTGATTAAGA AGGCTGTGCC GCCTCTAAGC CTTGCTAGAT TGTAGCCACT
1951 AGCAACCAGG CTGCAATAAT TTCCCTTTGA TGACATCATC CACTGTGGAA
2001 GAACCCAGTT GCTTCAGCGA GTCGAAC TAC AGTTTTAACC TCATCAAATA
2051 TGGCATCTCC CTTGCTTGCT GCAGCAGGGA TGGAAGAAAT GTCACTTTCT
2101 TTTTAAGCTA GCAAGCTTTT TCTTTTCTT TTTCTTCTC TATTTAAAAA
2151 TTCTAATCAT GGATGCTTCT TCCGACCCTT ATTTGCCTTA TGACGGGGGA
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2301 CTAGCTTAAA CTGGTTCTCG TTTGTCCTT AAATACTGCA GTACGTGTGTT
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3001 ATTCGAAAAA CAGACTGGTC GACATTTGTT GTCCTAGAAA AAAATTGAAC
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FIGURE 3A



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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301 TTTGAATTAC TGCATGATAT TATAAACTCA CCTTATGATT TAACCCAAAC  
3151 TTTTATTTGT AAGTATATAA GGAAGTAATA ATGTTTTTCT AATATAATTA  
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3351 TAGCATTATT TATCTTGCAG TATTCTGTAG TTAGTAAAAA CTTGCTTTTT  
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3751 TATTTTCTCT ATGCTATTAC AACATTTGGT TGTAAATGAT GATAGATCAG  
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3901 AGAAATAAGT CAAAACCTAT GTGAGAGTAG GCATGGTTAC TGATAATTACC  
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5851 CTTTGGACAA GTGTTATCAA AGTAGACTGT TCTCACATAC ACGGGGACT  
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FIGURE 3B



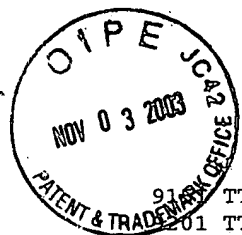
Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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FIGURE 3C



Attorney Docket No. CL001163

Application Serial No. 09/804,472

Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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9301 CCATAGGTAT GCTTGATCTT TATAAAGTTC CCTGTCTCTG GAAAACTAA  
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9751 TGGGGACTAC AGGCATATGC CACTATGCCC GCCTGATTTT TTTTAGTAGA  
9801 GATGGGGTTT CACCATATTG GCCAGGCTGC TCTTGAACCT CTGACCTCGT  
9851 GATCCACCCG CCTCAGCCTC CCAAAGTTCT GAGATTACAG GTGTGAGCCA  
9901 CCGCGCCCGG CCAGACATTT TTTTTTTTTT TTTTTTTTTT GCTGTCTTTG  
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10151 CTGATTAGCT GGGACTACAG GTGTGCACCA CTACACGTGG CTTTCCTGAT  
10201 GAAATTTTAA ATACCCAAAT ATTTGAGCAG AAATAATAGC TTGTGTTTAT  
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10451 AAGTCATGGA ATTTCTCTAC TAGGCCACCT GGAAGAAAAG TGATCTTTTT  
10501 TCCAGTCTTT TTTGTTACTG TTTTTCAGCC AGGAGATAGT AGAGTTAGGT  
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11001 CGATAATAAA TGGATAATAT GATTATTTTA AGTTTGGAAT TATACCTGGT  
11051 TATTAGTATT GGTATCTGG TAGTGGGGTT GGAGAAAAAG TCGAGAATAA  
11101 GAAAAGACTT AAAATCGTAA AAATTAACCTG GAAAAGAGGA TGGCTGAGCA  
11151 GATACATATA TGTTAGATAA TGTTTATAAT GGCAAACCAA CCTGAAGATT  
11201 TGTTTAAATT GTAGTATGTA GCCAGGTGTG GTGGTGCTTG CCTGCAGTCC  
11251 CAACTACTTG GGAGGCTGAG GCAGGATGAT TGCTTGAGCC TAGGTTTGAG  
11301 GCTACAGTGA GCTATGTTTC CACCACTGCT TTCCAGCCTA GGTGGCAGAG  
11351 CAAGACCCCA TCTCTAAAAA AATAAAGTAA AATGAATAAA TTATAATATG  
11401 TTATGACAAA TATAGTTATC TGAAGTCACA GAAAATGTGC ATGTGCATTT  
11451 AATGATGTGA AATAATTTTT AGGAAGTATG AATAAAAAAA TCAACTTTTA  
11501 AGTGTGGCTA GTATGATCTT ACCTGTATCT CACTTATAGA AAATATAAAA  
11551 GGCTGAAGCC AGTCACCAGT TTAATAGTTC TAACCTCTTG TTTACTTGAT  
11601 TCCCTTTTTT CTCCTCCCA GCAATCCTCA TATAGTTAGG TAAAGTTGGT  
11651 TCTTCATCAG CTTGTTGCA GAAACCCCTA AGCCTTTTTA CTTAAAGCTT  
11701 TTTGAAACCC AGAAACCCAT CTTTTGAATT CAAAAGTTT GACTGTTATT  
11751 AGTCTTTTTG TATGTTTGTT GGCCGCATAA ATGTCTCCTT TTTATGAACA  
11801 GAGAAGTGTC TGTTAATATA CTTTGCCAC TTTTGTATGG GGTGTTTGT  
11851 TTTTTCTTG TACATTTGTT TAAGTTCCTT GTAGATTCTG GATATTAGAC  
11901 CTATGTCAGA TGGATAGATT GCAAAGTTT TCTCCCATTC TGTAGGTTGC  
11951 TTGTTTCATC TGATGATAGT TTCTTTTACT GTGCAGAAAG TCTTTAGTTT  
12001 AATTAGATCC TATTTGTCTG TTTTGGCTTT TGTCGCCATT GCTTTTGGTG  
12051 TTTCAATCAT GAAGTCTTTG CCAGTGCCTA TGTCTGAAT GGTATTGCCT  
12101 AGGTTTTTCAT GGTTTTGGGT TTTACATTTA AGCCTCAAAT CGATCTTGAG  
12151 TTAATTTTTG TATAAGGTGT AAGGAAGGGG TCCAGTTCCA GTTTTCTGCA

FIGURE 3D



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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12201 TATGGATAGC CAGTTTTCCC AGCACCATTT ATTAATATTA AATAGGGAAT
12251 CCTTTCCCCA TTACTTGTTT TTGTCAAGTT TGCTGAAGAT CAGATGATTG
12301 TAGATGTGTG GTGTTATTTT TGAGGTCTTT GTTCTGTTCC GTTGGTCTGT
12351 ATATGTGTTT TGGTACCAGT ACTATGCTGT TTTGGTTACT GAGCCTTGTA
12401 GTATAGTTTG AAGTCAGGTA GTATGATGCC TCCAGCTTTG TTATTTTTCG
12451 TTAGGATTGT CTGGCCATA CGGGCTCTTT TTTGGTTCCA TATGAAATTT
12501 AAAGTAGGTT TTTCTAATTT TGTGAGGAAA GTCAATGGTA GCTTGATGGG
12551 AATAGCGTTG AATCTATAAA TTACTTCGGG CAGTATGGCC ATTTTCATGA
12601 TATTGATTCT TCCTATCCAT GAGCATGGAA TGTTTTTCCA TTTGTTTGTG
12651 TCGTTTCTTA TTTCTTGGG CAGTGGTTTG TAGTTCCTCT TGAACAGGTC
12701 CTTACGCTCT CTTTAAAGTT GTACTCATCA TCACTGATCA TTAGAGAAAT
12751 GAAAATCAAA ACCCAATAGA GATGTCATCT CATGCCAGTC AAATGGTGAT
12801 TATTATAAAA AGTCAAAAAA GAATAGATGT GGGTAAGGCT GTGGAGAAAT
12851 AGGAATGCTT TTACACTGTT GGTGGGAGTG TAAATTAGTT CAACCATTGT
12901 GGAAGACAGT ATGGCGATTC CTCAAGGATC TAGAACCAGA AATACCATTT
12951 GACCCAGCAG TCCCATTACT GGGTGTATAC CCAAAGGATT ATAAATCATT
13001 CTGCTATAAA GACACATGCA CACGTATGTT TATTATAGCA CTATTACAA
13051 TAGCAAAGAC TTGAAACCAA CCAAAAAAGC CATCAATGGT AGACTGGATA
13101 AAGAAAATGT GGCACATATA TACCATGGAA TACTATNNNN NNNNNNNNNN
13151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13251 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13301 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13351 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
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13651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13851 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13901 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
13951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
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14051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
14101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
14151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
14201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
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14401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
14451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
14501 NNNNTAAAAG ATACATCCTT TATTCATGCG TAAGATGAAA TCGAGAGGTG
14551 AAATTGGATA TACTGTTGCT TTTAAAAAAT TTTAACATAT ATGTAATTTT
14601 TTGTACTTAT CTCATTTTAG CCTATATAAG TTATATATAT TTTGTTTGTT
14651 TGTTTGTTTG TTTTGTTTGA GATGGAGTCT TGCTCTGTCA CCCAGGCTAG
14701 AGTGCAGTGG TGCAATCTCG GCTCACTGCA ACCTTCGCCT CCTGCATTCA
14751 AGCGATTCTC CTGCCTCAGC CTCCTGAATA GCTGGGATTA CAGGCACCTG
14801 CCACCGCGCC CAGCTAATTT TTTTATTTT TAGTAGAGAC AGGGTTTCAC
14851 CATCTTGCC AGGCTGGTCT TGAACCTCTG ACCTTGATGAT CCATGTGCCT
14901 TAGCCTCCCA AAGTGCTGGG ATTACAAGCG GGAGCCACCG CGCCCGGCTG
14951 TAAGTTATAT CTTACACAAA TCTAGGTTTC ATTCAGAGAA TTATATGCAA
15001 AGAAACAGTG CAATAGGATT ATTTTAAAGC TATTGTTATT GTTAGAAAAC
15051 ATAATACCTT TAAATTCCT TTTACATTA GAAATATAGT GGCTTCTCCC
15101 CAGTTTAGGA TAGAAATTTT CCTTTTCTTC TCCTTCTTTA TACTATTGAG
15151 ATTTGCATGT TTGACAGAAC AAATTATAAG AGAAAATATT TGAAATGTCA
15201 CATACTAAAG TAAATGTTTG AATGTTTGAA AATTTTCTGG TTTTCAGAGA
```

FIGURE 3E

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15301 TTTTGAATTG CTGAATCGTT GTGTAAATTA AGATGTTGAG TAGTTTCCAC  
15301 AGAGTAATTA TTTGAAAGTC ACTGAAAGCA AGACACATGC CTAATGTAAA  
15351 TGTATTATGC ACTACTGTAC CTTTTTCTAC CTCATAAAAA TGAGAATAGC  
15401 AGTCTGTACT TTTCCACTTC GTCATTCTGA AGTCTTTGCA GAAATTCATA  
15451 TTTTGTTCGCT TTATTATCTT CACGCTGTAA ATAGCTTGAA AATTCTTTAA  
15501 GTGGGGCTAG CGATGTATTA TGGATACATG TTAAGTGGTA TAGAAATTTT  
15551 ACTTTTTTTT TTTTGCATAA AGAGTAACAA GACCAGTAGT CCATATTTCT  
15601 TCAGCTCTAC CCAGAGAAGG GCAATGTAGG AGGGAAAAATG AAGTTTGCAA  
15651 AATATTTTCAT AGTAGGCTTT TTCTTAAAGT AACTTCAGAC TTACAGAAGT  
15701 TTAATAATAG TACAAAGAAT CCCCATATAC CTGTCACCCC AATTCTTGAA  
15751 ATATTAATAT TTTACCACAT TTGTTTCATTA TGTCTGTATT CTCCAAGTAC  
15801 GATATATGCC ATTATATGTA ATATGTAGCA TTTTATATAG ACATAGGGCA  
15851 TGTATGCACT ATATATTTTT TTCTGAGCCA CATAAAGAGT AAAACGCAGA  
15901 CATGACGTGC TTTTACTCCT AAATACTTCA GTGTGTGTAT TCCCTCAAGA  
15951 AAGGGCATT TCTTCTGTAT AGCTACCGTA CACTTCTACA CTTTTCAAAA  
16001 TCAGAACATT TACATTGATA CCATACATAG ACATGATCTG CAGACCATT  
16051 TCCAATATGC CAGTTGTCCC ACTGTGTCCT TTAGTACAAA AGAAAAAAGT  
16101 TTTTTTTCCT GGTCTAGGAG CTAATCCTGG AGCACATGTT ACATCCTGTT  
16151 GTTTTAATCT AGAACCGTTC CTCAGTTCTT TATCTTTCAT AACCTTGACA  
16201 TTTTGGGAGA GTACAATCCA TATATTTTGC AGAATTTCCC TTAGTTTGGG  
16251 TGTGTCTGGT TTTTCTTAT AAGATTCATT TTATGCATTT CTGGCCAGAG  
16301 TACCACAGAA GTACTGTATA TCTTACCAGA AAGCCTAAGT GGCATTTGCA  
16351 TTTTCTAAAT GATCAATTTT AATATTATAT GGAAAGCAGA GTCAGAGATT  
16401 CTCACATATG TCAAGATATT ATAAGTATTC CTGTTATATT TATTCTCAA  
16451 TTGCTTTTTT TCAAGAAAAT TTGTGGCCTT TCAGCTAGCT TTTCAAAGTG  
16501 GAAGTTACTA CATAACATTA GGATGGGAGG GGTGGGGAAG AGCTTTATTA  
16551 AAGCTTTAAG ATTGAGCTTT TGAGTATGTG TTGTATGTAA ATGAAAGTGG  
16601 GCATTGATGC AGGGATTGGG CCTTTAAACC TTTGGCCAAG AATGGTATCA  
16651 ATTATTATTA TTATTATTTT TTGGAGTACT TCTGCTAAAA CACTGAAATC  
16701 AGTGTGCCAC TCTCCTTTTA GAAGTTTAC ACCTTTCCAA GGTACACTTT  
16751 TTTTTTTTGA GACGAGTTT GCTCTGTGCG CCAGGCTGGA GTGCATTGGC  
16801 GCAATCACAG CCCACTTCAG CCTCTGTTTC CCAGACTCCA GCAGTCCTTC  
16851 CACTTCAGCC TCCCGAGTAG CTGGGATTAC AGGTGCACAC CACCATGCCC  
16901 AGCTAGTTTT TGTAGAGATG GGGTTTTGCG CATGTTGCCC AGGCTGGTCT  
16951 CCAACTCCTG CGCTCAATCT ATCCGTCCTC CTCAGCCTGC CAAAGTACTG  
17001 GGATTACAGG CGTGGGCCAC CACTCCCGGC TTCCAAGGCA GGCATTTAAA  
17051 TGTAATAAAT AGGGAGATAA GCAAGAACCC TGTGGACCT GGTAGAAGCA  
17101 AACATTTATT AGTACTATTA CGTTGTTTAA AATATTAGCG CCTTCTATAT  
17151 TCATGTCTCT CCAGAATTAT CAAAAAACCT ACTCTATAGT TTATTTGGCT  
17201 TATATCTCAG GAGTAATAAA ATTAGTTAAT AGTATTGGCA TCGTGGTTCT  
17251 TTGTGTATTC CTCCCTTATC CCACCCCAAG TTGATTTCAC ATGATCTCTT  
17301 GATCTAGTCT AAGAATGTTT ATAGTGATTA CGAGAAGTTC AGATTCTGGC  
17351 TTTAACATAT ATAATTGTTT TTTAATCTGT AAACCAAAGA GAATGAGTTT  
17401 GTTTAAACTA GAAAGATGCG AAGAGTAGTC TGGGAATTTT GTTCCATTCC  
17451 TTAAAAGTCC TATAATAAAA TAAACATATC TTGTGTTTTA TTTTACAAT  
17501 TTTTTTAAAC ATTAGTACAG AGTGCCACTT CTTATATTCT ATATCAAATA  
17551 ATGAGCTACA TTTTCAATAA TAACCTCTGA GTAATTTTGT GCATTAAAAT  
17601 GCTGCATTAC AAAATAATTT GAGGATATAA TTTATAATCA CTTATGCTAA  
17651 AATCACCTAT TTGAAATTAT GTATGAGGTT TTCAAAGTTT ATAGTGCTTT  
17701 GGAAAAAATT TAAATGTTTC TTTGTTTATG TATCTTTATT ATAAGCTGTA  
17751 GCATATATCA TGATGTTGTC AAGGATGCTG ATAGATACTT AATATTTAAA  
17801 GGAGACTTGT CTAAAGTTAG CTGTCCAGGA CTAGAATCTG GGCCTTTTGG  
17851 TAACAGCTCA TTGCTCTATT TACTTAAATG ATGATTGGAT TCGTTAGAAT  
17901 TTCTCTATTT TCATAGCTGT CTCTATGGTT CTATGAAAAT ACTGTGTGTG  
17951 TGCTTATACA TATATGTATA CCTGTAAGTA CAAAGTAGAA AATGAAAGTT  
18001 CATTTTCTGC TTTTGACAAT TGTAATCCCC AGAGATAACC GTTATTAATA  
18051 TGTTGCTCTA TGTGTTGTC TACTGTTTTC TCTGTATTCT GTGTATTACT  
18101 GTATAAATTT TACACAGTAA TTTGCATATT AAAAAATGCTG GTCTACACCT  
18151 GGCCCTTTTT TAAAACTGC AATTTATTAT GGCCAATTTT TTATACCAGT  
18201 ATATATTGAT CAACCTTATT CTTTTTAACT GCTGCATTTT ATTCAATACC  
18251 AATAGATGAG ACATTTCCAT TGGTTTGAAT TTTTCAGTAT TACAGATAAT

FIGURE 3F



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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18301 GGTTC AATATT AAG CTTTGTGCA CTTGTAGAAT TAATTCCTAG  
18351 ACATAGAACC CTTATATTTT GATAGGTATT TCCAAATTTT TTCCCAAAT  
18401 GTTTGTATCT CTTTACTTCC ACTCTCAGGT CTAATAATTT TCACTTGGAT  
18451 TATCATATTT CTTACCCAGC CTGTTTTTTA CACTCTAAAC TCTTTTCTT  
18501 TTCTTTTTTT TTTTGAGACA GCATCTTGCT CTTGGCCCGG TTGAAATGCA  
18551 GTGGCACGAC GACCAACCTG GGCTCAAGCA ATTCTCTCAA CTTAGCCTAC  
18601 TGAGTAGCTG GGACTACAGA CACATATCAC CATGCCCAGC ATTTTTTTTT  
18651 TTTTTTTTTT GGATTTTTAG TAGAGATGAG GTTTTGCCAT GTTGCCCAAG  
18701 CTGGTCTCAA ATTCCTGAGC TCAAGCAATC CACCCATCTC AGCCTCCCAA  
18751 AATGCTGGGA TTACAAGCGT GAGCCACTGC ACCTGGCCCA AAAGCTCTTT  
18801 TTCTAATAGC AATATAAATT GTCTTTTACA GACTATACTC ATATATGTTT  
18851 CTTCTTTTTCAG AAATAGGTGT TAAGTGATC TAACATGGAA TGTATAGCTA  
18901 TAATTCTCAT TGTGAAACCA TAGCCTAATT TATTTTCATAT TACAATTTAA  
18951 AATTCATATT TTTTAGGAAG TTTTCTTAGA TTAATCCGCC TAGTTCAGG  
19001 TGCTACAGTC CCAAGATTTT TTTCTTTTFA ACAAATTTAA TATAGGTAAC  
19051 ATGACTAGAA TTGTAGTCAA AGAATATTGG AACCTTGGA CTTCACTATT  
19101 TGAACCTTAT TTTGAAATAT AATTTGTTAT ATTATAAAAA TATTATAATA  
19151 TATTGCACCT GGAAGTTAGG GGCAGTTTTT TTTAATTCTC TTTGTATCTG  
19201 CTACACTGTA AAGTGCTATT TATGTAAAAA ATTCTTAATA GAAGTCTTCA  
19251 GTTGTAAGT CTGCTGTACA GACTTTAGAT CAGGGATTGG CAACTATGA  
19301 GCCATGTGCC AAATCCTGCC CTTACCTGT TTTGTAAATA AAGTTTATC  
19351 AGAACACATT CAGACTCATT CATGAACATA TTGTCTATGA TTTATTTTCT  
19401 GCTACTATGG CAGAATTGAG TTGTTGCAAC TGTGTGGCAT CCAAAGCCTA  
19451 AAATATTTAC TCTCCTGGCT CTTTGCCAAC CCGTTTTAGA TTATGAGCAC  
19501 TTTGGCATTA TTATGTTTTT GTTTTCTTTC TATAGCACAC AGTAAGATGT  
19551 TCTGCCACA TTGTGCATAA TTTATGGGTT TATTCAAGGA TTTATGCAAG  
19601 TGTAGCTGCA AGAAAAAAC CTAGAAGTGA ACTTGCTAGG TTGAAGAGCA  
19651 TCTGTGTATG TTAAATTTTG TTAGCTTTCG CCTTCCCAA GGGATTATTC  
19701 CATTTCTATC TTAACTACT AATTTTGTTGA TAGGACTTCT TTCTCCATAG  
19751 CTTTGCTAAA TTAATGCATT CACACACTTC ATCTTTACTA ATCTGATAGA  
19801 GGGAAATGAT ATTTGGATT TGATTTGCAT TTCTTTTAT GTGTTAGCTT  
19851 GAGCTTATTT TCATATTTAA AAGCCAATTG TATTTCTTTT TCTTGAGCTA  
19901 TCTTTTAATG TCCTTCTGA TACATTTCTG AAGTCTGTGA TACTCATATA  
19951 AGATATATGG TGAACATGTG TCAAAGATTT ATTTGACTCT AATGAGGGAA  
20001 CCCGCCTGAT GACAAGGCTG ATTGAGAAGA GGATGTGTGA GATGAAGTGT  
20051 ATATCATCAG TGAAAGAAAG CAAATCTTA CAGGGCAAAA ACAAAACCAC  
20101 AACTCTAAGG GTTATTGTTT CTACTGGACA GAATTCATTT GCATTTTACC  
20151 AGATAAAAT TACTATTTT AATTTATCTT TTACAAATCA TTTTCTAATT  
20201 TTACAGAGTC TATTCCCTAA TCAGTAGTAA ATAGTCTTCA AAATCTCCG  
20251 CAGCGTCAGG TGACTATTAT GCAGGCTAAT TGTTGACACT CGGGCTTGAC  
20301 TTTAAGAGAA CATGCCATA TCTTTTGCC TTACTTCAA GTTTTGATA  
20351 ATTTTCTTFA ACACATTTT CTCTAATTGC AATGATTTCA AGTGATATTA  
20401 TTTCTTTTTT TTAAATTTT TACTATTTA TTGATCACTC TTGGGTGTTT  
20451 CTCGGAGAGG GGGATTGGC AGGGTCATAG GACAATAGTG GAGGGAAGGT  
20501 CAGCAGATAA ACATGTGAAC AAAGGTCTCT GGTTTTCTTA GGCAGAGGAC  
20551 CCTGCGGCT TCCACAGTGT TTGTGTCCCT GGGTACTTGA GATTAGGGAG  
20601 TGGTGATGAC TCTTAATGAG CATGCTGCCT TCAAGCATCT GTTTAACAAA  
20651 GCACATCTTG CACCGCCCTT AATCCCTTTA ACCCTGAGTT GACATAGCAC  
20701 ATGTTTCAGA GAGCAGGGGG TTGGGGGTAA GGTTATGGAT TAACAGCATC  
20751 CCAAGGCAGA AGAATTTTTC TTAGTACAGA ACAAATGGA GTCTCCTGTG  
20801 TCTACTTCTT TCTACACAGA CACAGTAACA ATCTGATCTC TCTTTTCCCC  
20851 ATATTTCCCC TTTTCTATTT GACAAAAC TG CATCCTCAC CATGGCCCGT  
20901 TCTCAATGAG CTGTTGGGTA CACCTCCCAG ACAGGGTGGC GGCCAGGCAG  
20951 AGGGGCTCCT CACTTCCCAC ACTGGGCGGC CGGGCGGAGG CGCCCCCAC  
21001 CTCCCAGACG GGGCGGCTGC CGGGCGGGGG CGCCCCCAC CTCCCAGACT  
21051 GGGTGGCCGG GCGGAGACGC TCCTCACTTC CCAGATGGGG CGGCTGCCGG  
21101 GCGGAGGGGC TCCTCACTTC TCAGATGGGG TCGCGGCTGG GCAGAGGTGC  
21151 TCCTCACCTC CCAGACAGGG TGGCGGCTGG GCAGAGACGC TCCTCACCTC  
21201 CCAGACGGGG CAGCCGGGCA GAGGCGCTCC TCACATCCCA GAGGGGCGG  
21251 CCGGGCAGAG GCGCTCCCCA CGTCCCAGAC GATGGGCGGC CGGGCAGAGA  
21301 CGCTCCTCAC TTCCTAGACG GGATGGCGGC GGGGAAGAGG CGCTCCTCAC

FIGURE 3G



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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21351 TTCCTAGATG GGATGGCGGC CGGGAAGAGG TGCTCCTCAC TTCCTAGACT  
21401 GGGCGGCCGG GCAGAGGGGC TTCTCACATC CCAGACGATG GGCAGTCAGG  
21451 CAGAGACGCT CCTCACTTCC TAGTACAGGG TGGCGGCCGG GCAGAGGCTG  
21501 CAATCTCAGC ACTTCGGGAG GCCAAGGCAG GTGGCTGGGA GGTGGGGGTT  
21551 GTAGCGAGCC GAGATCACGC CACTGCACCTC CAGCCTGGGC AACATTGAGC  
21601 ACTGAGTGAG CGAGACTCCG TCTGCAATCC CGGCACCTCG GGAGGCCGAG  
21651 GCGGGCAGAT CACTCGAGGT CAGGAGCTGG AGACCAGCCC GGCCAACATG  
21701 GCGAAACCCC GTCTCCACCA AAAAACACAA AAACCAGTCA GGCGTGGCGG  
21751 CGCGTGCCTG CAATCCCAGG CACTCGGCAG GCTGAGGCAG GAGAATCAGG  
21801 CAGGAAGGTT GCAGTGAGCC GAGATCGCGG CAGTACAGTC CAGCCTCGGC  
21851 AACAGAGGGA GACCGTGGA AGTGGGAGAC GGAGACGAGG GAGAGGGGGA  
21901 GACCGTGGA AGCGGGAGGT GGAGACGAGG GAGAGGGAGA GGGATTATTT  
21951 CTGTATGACT TAATAATGAA TTTCTAAGAG GTCACCTAGC TCACTGTTGT  
22001 CTCTTCTAAA ACATACTCAT CTTTCCTTTT CTCTTCTGTA GGAACCTATT  
22051 ATACAATGAC AAATGGAGGC AGCATTAACA GTTCTACACA TTTACTGGAT  
22101 CTTTGGGATG AACCAATTCC AGGTGTTGGT ACATATGATG ATTTCCATAC  
22151 TATTGATTGG GTGCGAGAAA AATGTAAAGA CAGAGAAAGG CATAGACGGG  
22201 TAAGTGTTTT TAGTAAAAAT TTTTAAAAAC ATAGTGATA ATTAGATCTT  
22251 TTAATAATAT ATTTCTGCCA ATGATCTCAG GCTGCCAAAT GTTTACATTT  
22301 AATATAAGTA AATGTCTACA TTTCATATGT GGTACATGTT TTTTCTTTT  
22351 TCTATGTTTA ATTTTTTTAG TTTACTTATA CCCTGTAAC TCCAGAAAG  
22401 GATTTCAGGT AGCTAAAAA CAAAGAAATA CAATAAGAAG ACAAATAAG  
22451 AAGGAAAGGG AAAAATACAG CACAGGAGTT GGGGGGAAGA ACAAGCCAAG  
22501 TTCCAGATAT GGAGTCAGC ATGATTTTGG GCTTTGAGCA GCCCACCAGC  
22551 TAAGGCAAAA AAGGAAACTC ATTGCATAGC TCTTACCTAT GGAAAAAGAA  
22601 GAAATCTACT GGGGGCAGAT GGTCTTGTTG GATTTTGCTG TTTTCTTTTA  
22651 TCTCCTTTCC CAGCATTGTA TTCTGAGATA TTTCTCAATT TGGCTCCCAA  
22701 ATAAAGCTTA TTGAGTGTTG TAATGGTTTA CTGTTTTTTT TAAAAATGGC  
22751 TTTAACATAT AAAAGTACAA CTTATGGATC CTTTTTGTTT GTGGTCGTGA  
22801 CTTACTGATA ATATAATCCA AAATACATTT TTTATTTTGT ATTTATTTAT  
22851 TTATTTTGA GACGGAGTCT CAGTCTTCTG CCCATGCTGG AGTATAGTGG  
22901 TGTGATATTG GCTCACTGCA CCCTCCGCCT CCTGGATTCA AGCGATGCTC  
22951 CTGCCTCAGC CTCCTGAGTA GCTGAGACTA CAAACGTACG CCACCATGCC  
23001 TGGCTAGTTT TTATACAAA TACGTTTTTT AAAAAACAAT TTTTTTTTGT  
23051 GAGGTCGGGG GACTGTCGCC CATTCTGTTG CCCAAACTGG AGTGCAGTGG  
23101 TGCAATCTTG GCTCACTGCA ACCTCTGCCT CCCAGGTTCA AGCGATTCTT  
23151 GTACTCAGCC TCCTGAGTAG CTGGAATTAT AGGTGTGTGC CATCATGCCA  
23201 AGCTAATTTT TGATTTTGA GTAGAGATGA AGTTTCGCCA TGTTGGCGAG  
23251 GCTAGTCTCA GACTCCTGGC CTCAAGTGAT TGGCTGACCT CAGCCTCCCA  
23301 AAGTAGAAAA TCTTCTGAA AAATAAAATT CCAATCTCA AAAGGCCCTA  
23351 TATAATTTTG GTGTTGAAA TTTACTTGTC AATGAAATG ACTATTACA  
23401 CAAATTATAA GCTTCCATAT TAATATATAT GTGTGTGAAC CTGAAATTCA  
23451 AATTTTATTA TATTGTTTAT GAAAGGTACA GCCTCTGAGA TTCATCAGAT  
23501 GGTATTTACC TTTAGGCAT ATCTAAAAAT AAAATACAGT ACATGAAATC  
23551 CAGTGCTTTA ATCCAGTGAT TCTTAAACTT TTTGCTCTCA GATCCCTTT  
23601 AAACCTCTAA AAGATATTGA AGAGCTCCAA GGAGGCTTTG TTTACGTGGT  
23651 TTTTATCAAT GGATATTTAC CATATTAGAC ACTGAACTG AGGATTTTAA  
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23751 ACATAAATAA CATTTTTACG AAACATATAT TTCAAAATTT AGTGAGAGAA  
23801 TGACATTGTG CTACATTTGT TATAAATCTC ATTATTGTCT GGCTTAATAA  
23851 AACACTGCTG GATTCTCATA TCTGCTTTTG NNNNNNNNNN NNNNNNNNNN  
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23951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24251 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24301 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24351 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN

FIGURE 3H



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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24401 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24451 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24601 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
24851 NNNNNNNNNN NNNNNNNAAA TATTGATTCA CTGATTATG TGGATCTTTT  
24901 AAATGTTGAC ACTTATATA TATAATACAA TATTTTAAAA ATCACATTG  
24951 TTAATTTTAC CTTTGATCTA TTCAGAAAAG ACTCTAAGTA TTGGGAACCT  
25001 ATCATCCTCA CAGTGATAGA TACAAGTTTC CTAAAATTCT GATTTTACT  
25051 GGAGAGCTCA AATTCTATCA TTGGAAACAA ATACACATTT ATTTAACTTA  
25101 AAAATGACAG GATTACTTGG TTTTCATTATT GAGAAAATAC CTGTCAAATT  
25151 CCCAAGTCTG GAAAACCATG GTTTGATGTC ACTCTTTCAA GTAAAAATGG  
25201 CATTCCATGT AAGAAGTGTC TAGTTTATTA TGCAACTCAA ATAAATTACG  
25251 CAAGTGCTTT TCTTTAGGAC ATAACCTCAT ACATACTTCC ACAAGCAGCA  
25301 GATGTGTGTA GTTATGCATA GTTCCTTATG CATGGTCTT ATTTTCATCAC  
25351 ACAAATATT AAAAGACTC AGTGATTGAG ACGTAGCAGT TTTTACTGCT  
25401 TCATCAAAGA TGCTCTTATT TGAACTGGC ATAAATATGAT TTATTTATTT  
25451 GATTTTACTG GGAAGCATGG CAGTCAAGAA TGTAATGACT GCCAGTACAT  
25501 TTGAGTGCCA CTGCTTGATT TTTGCTATGG AGTCAGCAAT TTTGCCACTG  
25551 GTTTTGCAAT TTCAGTAAAA ATGTCAACAC AGTGAAAAAG GCACATAATG  
25601 TCTTGATTA TTTTGTAAAC AGTTTTATCT TGCAGACCCC TTGAAAAGGT  
25651 CTCGGGGATC CTCCAAGGTG CCAGTAGACC GTACTTTGAA AATCACTATT  
25701 TTAATCCAAA GTGCCTAGAT CAGACACACT ATAAATCCTG TGTCTTGAT  
25751 GATCATTAGG TAAATACATT TGTACTTAGA AGTATACATT CAGAGACATT  
25801 AACAGTATTC AGGTTGGGAT TTAAGTATAT TTTAAAGTGT GGTACCTAGA  
25851 GAGTATCCAT GACACTATGT TCATAAAATC TTAGAGAAA CTGAGATCAA  
25901 AGGAAACCAA AACAGGCTGG TCATAGTGGC TCATGCCTGT AATCCCAGTG  
25951 CTTTGGAAGG TTGAGGCAGA GGATCGCTGG ATCCCAGGAG TTTGAGACCA  
26001 GCCTGGGCAA ATATGGAGAC TATCTCTACA CAACAAAACA AAAATTAGCT  
26051 GGGTATAGTG TCTTGCCTCT ATAGTCCTAG CTACTCGGAA AGCTGAGGTG  
26101 GGAGGATCCC TTGAGCCTGG AAGTTCTAAG TTACAGTGAA TTATGATTGC  
26151 ACCACTGCCC TCCAACCTGG GTGAAACAGC AAGACCCTGT CACCCTCCAA  
26201 AACAAACAAA AAACACTTTT TTCTCTGAGT ATGTAAATGG TTAGTGATCA  
26251 GTCCTTGAAA ATCATTGCAA TAGTATAGCA ATATATGAAG TAGCCAGTAT  
26301 GTGTCCTAGC TAATTTTATC AATCATCTCT TCCTAGACCA ATCAAATATT  
26351 TTTCAATATT TTGATCCATG CTTATATGAA CAAGATTTT TAAAGCTGGA  
26401 AAATTCCACA CATTATATA CTTACTATTG TTCTTAAAT TAATTTTTTT  
26451 TTTTTTTTTT TAAGCAGAGT CTTGCTCTTT TGCCCAGGCT GAAGTTCAGT  
26501 GGGGCGATCT CGACTCCCTG CAACCTCTGC CTTCCAGGCT CAAGCAGCTC  
26551 TCGTGCTTCA GCACCCCAAG TAACTGGGAT TACAGGCATA CGCCACCACA  
26601 CTGGCTAATT TTTGTAGTT AAGTAGAGAT GTGGTTTCGC CATGTTGGCC  
26651 AGGCTGGTCT CAAACTCCCG GCCTCAAGTG ATCCACCTGT CTCAGCCTCC  
26701 CAAAATGTTG GGATTACAGG TGGGAGCCAC TGCGCCCGGC CTACATTAAA  
26751 TTTTAAAGCC TTTCTATGTC AGTGCATATA CCCAACCTAA TTCTTTTTTT  
26801 CCGTGAACCT TTTTGTATG CTTGTAGCCT TCCTACCCCA GATTATTTCTG  
26851 AAGCAAATG TCATTCTGTA ATTTCAAATA TTAATTATTC AGTATTTTAC  
26901 AAAATGGTTG CAGTTTAAT GTTGTTCCTT TTTTATTTAT TAGCTTGCAAT  
26951 ATTTCTATAG AGAGTTTACC CCACATCAAC CATTTGGAAT ACCTGAAGTA  
27001 AGGGTGGTAC AGGAAAGGGA GAAATCTTGA AATACTAGGT TCCTTAGCAT  
27051 CCTCAAAGTT GACCAATGAG ATTTTTTGCT TGTTTGTTG TTTTTTCTG  
27101 TGTCTTCTGG ACTCATGGAT TTAAGTATAT TTGTGGTTA ATCATCACTG  
27151 TTATTATCT TATTGATGTT CATGTTATTT TAGATTAGTG GGAGCTTTTT  
27201 TAGTTTGCTA TCTGTTCCT TCGTCATGTC CTTAGATAAT CCTAATCCTA  
27251 ATCCTGATTC ATCGTAGACA TTTCCCGCAG CAAACCTGGA ATCAGCCATT  
27301 TCTCAAGGAG CTCTCTGATT CCATTGAAGG AAAATATAAT ATAGGTACAA  
27351 TCTAGGCACT AGGTGATACT TGTTACTTCT GGGTTGGCTA TTGTTTCTAG  
27401 CCTCCTAAGT TTATATGACT GTACTAATTT GAATTCATAA CTATGGGACT

FIGURE 3I





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Application Serial No. 09/804,472  
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30501 AGTATAAACT GTTCTTCCCT CCTTCCCTCA ATTTTTTTTC AGGTACCATT  
30551 GGATTTTAAA AAGCATTGT TTCTCTTCTT CAAAAAATCT CCTTAAATAT  
30601 AAGACTAGGA GGCAGAGGCT TCCAAGTCTA GTCTTGGCTC TATCACTTTA  
30651 CGTGTTTATC CAGCTTGGTT GATCTTTCTG GACTCAGTTT CTATATCTGT  
30701 AAAATAAGTG GTTTGGATCA GATGATCAAT AAAGTATCTT TTGATATTAA  
30751 CATCGTAATA AATAGCTAAT ATTTCTTGAG TGCTTCCTAT GTNNNNNNNN  
30801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNTGGAAGAT  
30851 TATGTTTCTA AGACCATAAA AATTAAAATT TTTGTGGAGA ATAAAGTACT  
30901 GATAATTCTA ATTGGCATGC ATAGTAATTT TATGGCCTCT GTGTATGTAA  
30951 CCCACTGATC TCTTTATGTA AGAAGGACCC AGATTTGACC ATAAATTTGT  
31001 GTATTTTCTT TATTCTCACA ATAAAATAAT CTTGATATAT GGTTTTCTGT  
31051 AATTTAAGAA AATATTATTC CTATGAGTTT CAATAATTAT TTCTAATGGA  
31101 CATTAAATTT TAATGAAATT GACATCATTT ATAAGTCTGT TAATTAAGTT  
31151 ATCGATTGAA AATTAGATTT GTGAACCTCC TGCCAAGTAG CTGCTTTTGT  
31201 AAGATATTTT AGTATCTTTT AAACATTGTT TTTTCAATCA CAATTAATTT  
31251 GAATGATGTA ACTTTTAAAA ATTCCAAACA AAAATAGCAC TTTTATTGTA  
31301 AAAAATAACT CTTTACAGTT TATAACTAAA ATTTGAAAAT CTTAAATTTA  
31351 TATGTAGTTC ATAAATGACC CTTTATTTAG GAGTCTCCTG CTTTCTACTT  
31401 GCCTTTTAAAC TAGATTGTTT TCGACTCCCA AAAAATTGAC TTAATTTTCT  
31451 TACCATCTCC AACATGTTTT TATAGGGGCA CTGGCCGGAT TAATAGACAT  
31501 TGCTGCCGAT TGGATGACTG ACCTAAAGGA GGGCATTGTC CTTAGTGCGT  
31551 TGTGGTACAA CCACGAACAG TGCTGTTGGG GATCTAATGA AACAACATTT  
31601 GAAGAGAGGG ATAAATGTCC ACAGTGGAAA ACATGGGCAG AATTAATCAT  
31651 AGGTCAAGCA GAGGTAAGTC TTGCTTTGTC TCAAGATGAA TTAATAATTG  
31701 ATATAGCAAA ATGTTTCCAA TTCATTTAAT TATAGAACAT ATCACAATTT  
31751 AGATGATTAC ATACACATCA AATGGATCCA CCCTCAACAC ATTGCAGCAA  
31801 GAAAGAATTA AGTGCAATAT TGTTTCAAGT AGCTTTTTTA TTAGTTAACT  
31851 GCATAGTCAT ATAACAAATC CTCTGGATTG TGGTGCAAAT ATATTTGAGC  
31901 TGTAGTAGAA AAGAAGTGAT AGTTATTGCA GTAAGATCTG TGTAAGTTA  
31951 CTAAGAAGTC AAGTTATTAA AACTAATATA TTAATAAGAT TGGGAAGTTT  
32001 GAATTATGAA AGTATTATCA AATAATTTAG TAAAATCAAC CTACGTAGAG  
32051 ATACATTGAA GATAATCAGA CATTTTTATT TGTGGCATTG CAGCATTAA  
32101 ATGATTGATT TACTATGATC TACAAAGAAC ATTTTAGAAC TTAGGATGTT  
32151 ACATGTATAT TTTTACATG ATGACATGGA TATATTTTTT AAATTTTGT  
32201 TTAGCTGAAC TTTAGAGCTA AAAGGTATAC ATTTGCGGTA AGATGAGTAG  
32251 TATGCTGTTT CTCACCTGGC TTAATTGAAT TGAGTTTAAT GATCTGGAAA  
32301 GTTGCAGCAG AATGAAATCT GAGTGGTGAT GCAATTTGTT TCCACTGTTT  
32351 CCAAAAAGTG GTTTGTAGGC AGAGATTGAA GTATAGCTGA GATGTGTTGG  
32401 TAACAAGACT TTAGGGATTA GGAAAAAGAT TAAATGTGCT CAGGGTTCCT  
32451 TGGTATATGT AGGCATTAAT TTTTGGACTC TACTTAAATA TTTTGTTCAT  
32501 ATAAAGTTTT TATTATTGTG GAAATAAACC AGGAGACTTT TACACATTTT  
32551 ACTGAAGTTT CTTTCTTTTC TTTTTTTTTT TTTTTTTTTT TGGCCGGTGG  
32601 GATGGAGTCT CACTCTGTTG CCCAGGCTGG AGCGCAGTGG CACGATCTCG  
32651 GCTCCCTGCA ACCTCCGCTT CTGGGGTTTA AGCGATTCTT CTACCTCAGC  
32701 CTCCCAGATA GCTGGTATTA CAGGCGTGCG CCACCATGCC CAGCTAATTT  
32751 TTGTATTTTT AATAGCAACG GGGTTTCACC ACATTGGCCA AGCTAGTCTC  
32801 GAACTCCTGA CCTCAGGTGA TCCACCCGCC TCAACCTCCC CAGTGCTGGG  
32851 ATTACAGGCG TGAGCCACCA TGCCTGGCCG TTTACTGAAG TTTCTTATGA  
32901 CAAGCATTTG CATTAGAGGT GCAATGTAAA TTAAATTCAT ACTCTCGAAC  
32951 TATTTTCTTT TTAGGGTCCT GGTCTTTATA TCATGAACAT CATAATGTAC  
33001 ATCTTCTGGG CCTTGAAGTT TGCTTTCTTT GCAGTTTCCC TGGTAAAGGT  
33051 ATTTGCTCCA TATGCCTGTG GCTCTGGAAT TCCAGAGGTA AGCCAAGTAA  
33101 TATTTAGTGT CATTAAACAT TATTATGATG CTTATCTTTT TGACCTTAGT  
33151 GATAATAAAA GTTGGCTTTT CTGGAGGGAG GGGATAGTTT GTTCATAATA  
33201 TGAAAAAAA ATTTTTTTTAA GTATAAGCTG ATGGTAGACA TCATTGAAAA  
33251 ATATTGTTCC CCATAGTCAT TTGGTCATTT ACTGTGAAGG CTGATTTTTT  
33301 TTTTCTCTCA CCATAATTT AACACATGAC TAGGCAAAAT TTCAGACTAT  
33351 TTAGTTAAAC ATCAAGAGCC TGGAAGAAGT ATCTTGTGAC CTAATGTTCT  
33401 TTGACGGGTT AGTTGTTACT TTGCTGTTAT GACCCTGAAT TTTTTTTTTT  
33451 TGAGACTGAG TCTTGTGCTG TCGCCAGAC TGGAGTGCAG TGGCGCAATC  
33501 TCAGCTCACT GCAACCTCTG CGTCCCAGGC TCAAGCAATT CTTGTGTCTC

FIGURE 3K



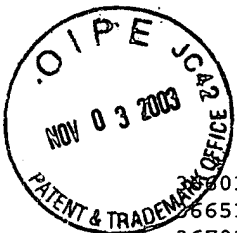
Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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551 AGCCTCCTGA GGAGTTGCGA TTGCAGGCAC CTGTCACCAT GCCCTGCTAA  
33601 TTTTGTGCATT TTTTGTGTTG TTTTGTGTTT TTAGTAGAGA TGGGGTTCATCA  
33651 CCATGTTGGC CAGGCTGGTC TCAAACCTCCT AACCTCAAGT GATCACCCGC  
33701 CTCAGCCTCC CAAAGTGCTG GGATTACAGG TGTGAGCCAC CACACGTGGC  
33751 TATGACCCGTG ATTTTGATTC ATTCACCTTT TATAATTACC TTTTGATTAG  
33801 ATAAGTTAAT TATTCTTGAA TTTGGCCATT TTATGCTTTG AGAAAGTAGT  
33851 TAATCACAGT GGGTCAACAG TACAAACTTT TGGGTTTTAT TTTTCATCAC  
33901 AATAAAGTAG AGTTATACAT AGGATTGATT GAACTTGATT TGAACCTATC  
33951 TCTTCTCTTT TATTTTCTCG GAGTTAAATA AGTTACCAAC TTTTCTCTAA  
34001 TACATTTCTT TTTAAATGG AATTGTATTG ATCCTTTAAG TTTGTATTAA  
34051 GAATATCTTT CATAAAAAGC AATATCATGC AGTATATAAC AGTTGTTACT  
34101 CATTCTTGAT ACATAAAAAA CTATTGCACA TAATTACAGG ACCTCAGAGA  
34151 AAACATAATA TTCTTATTTC TAACATAATG GCCAAATAT ATTTAAATA  
34201 TTATGCTTAT TTTTACAACA GAAATATTCA AATTTGCCCT TTTTGTGGGT  
34251 ATGTAATTAT AATCCTTATA ATTAAGGTCT GTATTCATTT TAACATGGCC  
34301 TGATATTTTG ATTTTGGCCT GAGATAGTGT TGCCCTCTCT CTTTCTTGG  
34351 GTAGAGAATT AGATTATAAT ATCAATTTAT TATATGTAGC ATAATAGGCA  
34401 AGTTTTCGAA AAATTAACGT TAAATTTTCT TGTAGACTGC TAAAATTGTC  
34451 AAGGTTGTTT TTGTGCATAA AACAAGAAAA TAACCTGGAT TCGTTACATT  
34501 CTCATGTTTC TTAAAGGACA TTAAGCTGCC TTAATCTTTG CTTGTAGAT  
34551 TAAACTATT TTAAGTGGAT TCATCATCAG AGGTACTTGG GGAAAATGGA  
34601 CTTTAATGAT TAAAACCATC ACATTAGTCC TGGCTGTGGC ATCAGGTTTG  
34651 AGTTTAGGAA AAGAAGGTCC CCTGGTACAT GTTGCCTGTT GCTGCGGAAA  
34701 TATCTTTTCC TACCTCTTTC CAAAGTATAG CACAAACGAA GCTAAAAAAA  
34751 GGGAGGTAAG TGTCTTTTGT AGTTAATTG ACTGAAAAAT ATATATTATA  
34801 TAGTATTTAT TTAAGTAAAG AATTTCTTAG TGTAAAAATA ATAAATTCTG  
34851 TATTCAGATA AAAAATTTTG AGATTTGTGC TTCTGTTTTT CCTGAATAAT  
34901 CTATAACATC TTTCTAGAAT CCATTCCCAG TGCTGCTCAG TTCGTCTTAC  
34951 ATTTTAGAGA AGCTTTAGAT AGACAGCTGG TGTCCATTGG GTTTCAGCTG  
35001 CATTTCACGA AGATCTTCCT GTTATCACTT TACCTTACAT CTTTCTCTT  
35051 CTGAAGTGT TTCTAAGCTT AGCTTTGTTT TTCACTCTTA CTTTCAACAT  
35101 TAAGAGGTTG GGAATCTTA ATAGCTATGT TTTCTCTCTG GAGGCAGTGT  
35151 CTGGTGCCAG TGTAAGTGGT GTGTGATATG AAAAATGCTA TCCAGTGCTA  
35201 TGGGGAAGTT CTGAGGCTT TTAGAAGCTC TTGAAGTTA AATCAGAAAT  
35251 TCACATTAAA GAGATTACAG GAAATCCTTT TCATTGATT GTTTAAGGCA  
35301 ATTTCTTTTA CCATTTCTTT AGGCCAGCCT GAGATCTTCT ACAAGACCTT  
35351 GAAACCTTAT ATATATTATG GATTTCCTCT GATGTTTCCA TATTGCTCTG  
35401 GGCATTTTCC TGAATCCTTT ATATTAGCTC TAGACTTTGG GAGCCCAGTC  
35451 CCTTCTTATT TTCCAAATCT AAATCTACAG CCCTAGATGG TACAGAGATC  
35501 TTTGAGTTTT TAAGATATGA TTTTGTGAAA AACATCTCAT TAAATACTGG  
35551 CAGAACCTTT TCATCTTGTT GAGTTTTTTA ATGTACTGTA ACCAAAAAAG  
35601 TAGAATATTT TATCAAACCTG TTTAATCTTC AATTGAAATA ATTCTAGTAC  
35651 ATTTTAATGT TCGCATTAAT ATATTGTCCCT TGCATTGGAC GTAGATATCC  
35701 CAAAAGTGGA ATACTTCAGA TTGTCGTAGT TTCATCTCTG AATAATTGTG  
35751 ATTTCCAGTAC TTTATAACAA AAATAGCTAG CATTATTGAT TACTTCTGT  
35801 GTATCTGGTA CTGTGGCAGA TACTTTACTT GGATTTTAAT ACTTAATTTT  
35851 ACAGTAATTT AGTAATATGG CCCTGTTATC CTCATTTAGT GATTAGTAAA  
35901 CTAGGGCTGA AAACAGCTAA CTAACCTGCC CGAGACTACA TACCTAGTAA  
35951 GTGGTGGAAC GTAGGTTAAA ATTCATTTTT CTTTGACTTC AAAGTCTGTG  
36001 GTCTTACCTA CTTACATTAC TGCCCTTACG ACTATGTGGG TATATATTTG  
36051 TGTGTGTTCA AAACAACTC AAAACCATCC TGTAGCGTAG CAAGTTAGTG  
36101 GCTAAGATGA AGCTAGAGCA TTTGCCTCCT CAATTCAATT CCATTACTTT  
36151 CTGTTGTACC TTTATATTTT TTGGTAAGAC TTTTACTTAT TCTAAGTTCA  
36201 AAAAATGTAA TTTATTAGAT GTTTGAGAAA TTAAGTTTAC CTAAATTTTA  
36251 ATGTTTCATAC TGTAGTGATT AGTTAATGTT TAATACGTTG TTATTCTGTC  
36301 ACCTTAGTGT ATATATAAAT GGCAAGAATT CACGGTTAGT TGAAAGCATT  
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36401 AATTAAATGC TTCTTAGATA CGTATGAAAT GGATTAAAAC ATGTATATGA  
36451 GTTATAGATA CCTAGGTGTT AGTTTGTTG TAAATTCAGG ATCAGGACAT  
36501 TCAAATAAAT ATGTTTGCTT TCCTCTTAGT GGAGGAAAAA AAAAAGAAGC  
36551 TAAATTTGCT CCCTTCTCTC CCCAAATAAG CAGAGTCTAC ATTTAATGCT

FIGURE 3L



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36651 CAACAATTG ATAAAAACAA ATATTTATTT ATTTTTAATT CACCAACTT  
36701 TTATAAGTA TTTACTGGTG CCAGGCACTG TTCTAAAGCA CTCTGTATAT  
36751 ATTTACTCAG TCCTTAAGAG CTAAGTAATA TTATCACGTT TCCATTTTAG  
36801 AGAAACTGA GGCACATATA GGTTAGGTTA TCTACCCATA GCCATACAGC  
36851 TAGTAAGTAG CAGAGCCATG ATTTCAACAC AGCAGCCTGA CTATGGAGTT  
36901 CATGATCTTA ACCATTTACA GCTTAATTTT TATTATTTAT AATTTCTCTT  
36951 CTGGAAATGT AACAATTGAC CATTTGAAGA AATACTTTAG GTAGCTTTGG  
37001 ATATTTGCTG TATTAAAGTA GTGAAAGTAA TACAGACACT TGGCTGGGCG  
37051 CGGTGGCTCA CGCCTATAAT CCCAGCATTT TGGTAGGTTG AGGCAGGCAG  
37101 ATCACCTAAG GTCAGGAATT CGAGACCAGT GTTGCCAACA TGGTGAAACC  
37151 CCGTCTCTAC TAAAAATACA AAAATTAGCC GGGCGTGGTG GCAGGCGCCT  
37201 GTAATCCCCA GACTCTCGGG AGGCTGAGCG AGGAGAATCA CTTGAACCCA  
37251 GGAGGTGGAG GTTGCAGTGA GCTGAGACGA CGCCATTGCA CTCCAGCCTG  
37301 AGAAACAAGA GAGAACTCT GTCTCAAAAA AAATAAAGGA ATACAGACTC  
37351 TTAGAAAAAT AATTACAAAT AAAACCCTAG TGAAATTATA GGTATAGTTA  
37401 GGTATAGTTG GCTTACAGGT GGGAAGTAGA CCATTACCAA CTGATAGACT  
37451 GGGGAGCTGG AGAGAGGACA CGGAAGAGTG TCCTTGGATT TTTCNNNNNN  
37501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
37551 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
37601 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN  
37651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NAAAATTGTC TATATTCAAT  
37701 GCCTCCTCCT CTTTACACCC TATTCACATT AGTATATCTG GCAAAAATTT  
37751 TTTTAACTG AATGGTAAAT GCATGACTGA CCTTTCAATT AAAGCCAGGA  
37801 GAAAGAAAACA AATCTTAATA GAAGAAATGA ATAGTTACCC TTTGCTTAGG  
37851 GAGCAAGGAA ACATGCAAGT TAAATTCAGA AAATCCATTT GGAAAATTCA  
37901 AGTAACATGA AGAATTTTTA TTTGGTATGT TTGAATTTCT ATGAAATTAT  
37951 GAAATAAGCC ATATCCTCTT TCTAGGTGCT ATCAGCTGCC TCAGCTGCAG  
38001 GGGTTTCTGT AGCTTTTGGT GCACCAATTG GAGGAGTTCT TTTTAGCCTG  
38051 GAAGAGGTAG GTGAAAAGAA TACAACAATT AAAATTATAT ATAATTACCA  
38101 TTACAAATAT ATTTACACA TTTCACTTTT GTAGGTGATG TAATAGGTAG  
38151 AGACTTTTGT TTCAAATTTA TTTTCTAAA GTTGTTTTCC ACTCATTTCT  
38201 AATAAAAAGT AAATGTTATT CATGCTCCAT ACCTGGAGGA AACTTTTAA  
38251 AAATTTATTA ATGTATGAAT GTTAGTAATT ATTTAAATC TAACTTTGT  
38301 GACATATTTA AAAGTAAGAA GATGTGAATT TGACTTAATA GAGGACATGT  
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38551 TCAAGTGATT CTCCTGCCTC AGCCTCCCAA GTAGTTTTTG TTTAAAAAAT  
38601 TTTAATCAAT TCCTATGTTG AGTTTTAAAG TTTTCCCAT GTGATTATTT  
38651 CTGATACAGT TAGTGATGTT AAAGAAAATA ATTTTAGTGA CTTCACTGGA  
38701 TTATTTTGT TTTGTTTTCT TAATAGGTGT TTAAGACTTT TCTTTTACA  
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38851 CGGAATAATC AAATCAGAGT GATTAGCAA TCCCTCAAAT ATTTATTATG  
38901 TCCTTGTTGT GGTGAGAACA TTTAAATCC TCTTTTAGCT ATTTTGAAAT  
38951 ATATAATACA TATTATTAAC TGTGGTCATC TTAGTGTGCA ATAGAACACC  
39001 AGAACTTATT CCTCCTCTGT AAGTTCATAC CCGTTGACTA ATGTCTCCCC  
39051 TTTCCCTGTT CACCTCCCA ACCCCTAGCC TCTGGTAACC CCTATTCTAC  
39101 TCTCTACTTC TATGAATTTA ACTCTTTTAG TTCAAGATGT TTTTAAATGT  
39151 ACTTTTTTCT TTTAGTTGTT TGTATTCTTT TTTTTTTTTT AATGTAGAAG  
39201 AGGCAAATTA AATGCATTAT AAGTTAACAG GAGTTGGTGA TGGTACATTT  
39251 ATTTTTAACT ACCATGATTG AATTGAATGT GAAACTCATT TTGAATATAA  
39301 AACAGCACTA GGTATTCTAT TAGTATTTAT TAGACATTTA TGATCAATTG  
39351 ATACTGTCAA TTTGTAATGA TGATCACCAT CTCCAAAAAT AATAATAACA  
39401 TCAATTTTTT TTATTACAGT AAAATCCATT ACATGTAAAT TCTAACTACA  
39451 GCAAAAATTTA GAGCTAGGAT ATTTACCATT CAAGTTATAA TATATCAGAA  
39501 ACATCTTATA AAATTATAGC ATTAATTTTT CTTTTCTTT TCTTTTTTTT  
39551 AGGTTAGCTA TTATTTTCCT CTCAAACTT TATGGAGATC ATTTTTTGCT  
39601 GCTTTAGTGG CTGCATTTGT TTTGAGTCC ATCAATCCAT TTGGTAACAG

FIGURE 3M



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39701 AACTGTTTTCC TTTTATTCTT CTAGGGGTAT TTGGAGGGCT TTGGGGAGCC  
39751 TTTTTCATTA GGGCAAATAT TGCCTGGTGT CGTCGACGCA AGTCCACGAA  
39801 ATTTGGAAAG TATCCCGTTC TGGAAGTCAT TATTGTTGCA GCCATTACTG  
39851 CTGTGATAGC CTTCCCTAAT CCATACACTA GGCTAAACAC CAGTGAACCTG  
39901 ATCAAAGAGC TTTTACAGA CTGTGGTCCC CTGGAATCCT CTTCTCTTTG  
39951 TGACTACAGA AATGACATGA ATGCCAGTAA AATTGTCGAT GACATTCCTG  
40001 ATCGTCCAGC AGGCATTGGA GTATATTCAG CTATATGGCA GTTATGCCTG  
40051 GCACTCATAT TTAAAATCAT AATGACAGTA TTCAC'TTTTGCATCAAGGT  
40101 AAGTGCTAAT GTGAGGTGAT ATTTGGGTAA TTTTGGCATG TTCAAACTT  
40151 ATATGTGGAA TGAGAGAGGT TGTGTGTTCA TAAATGACTG AAAAAAGTAC  
40201 TTATCTTTTG TTTTAAATT TAAGTAATGA AAAAGATAAT TCCTTAGCAT  
40251 ATATTGTTGA CCATGTTATC TGTGCTATT TAACAAATTA CCCCCAAAA  
40301 CTTAGCAGCT TAAGGTAACCT ACTTATTTTG TTCTTGATAT TGAGTCAACG  
40351 ACTTGGGAAG GGCTCAACTG GGCAATTTT GCTTGTGGTC TTTTCATATAG  
40401 TTGTTATTAG ACATGGCGAG GGCTAATCAT CTCAAAGCTT CTTTTTTTCG  
40451 TTTCTTTTTT AAAAACTGT TTTTGTGGAT ACACAGTAGC TATATATAGT  
40501 TTTGGGGTAT ATGAAGTATT TTGATAGAGG CATGGAGTGC ATAATAATCT  
40551 CAGGGTAAAT GGAGTATCCA TCACCTCAAG CATTATCCC TTGTGTTACA  
40601 AACAATCCAA TTACACTCTT AATTATTTT AAGTGTACAA TTAAATTATT  
40651 GAATATAGTT CAAAGACTTC TTCATTATG ACTAGCACCT AGGCTAAAAA  
40701 AATTACAGACA CCTGGGCTCC TGGGATCAAT CACGCATACT GTGTCTCTTG  
40751 TGCTCACTCC CGCTGTCTCT CTCTCTTTCT CTCGCTTCCT TTTTCCTCTC  
40801 TCTCTGTGGT TTTCTAGGGT GGTGGCCTCA GGAATTGGA TTTCTTATAT  
40851 TATAGCTCAG GATTCCCAAG AGGGCTGTT TTAATGTAGC CAAAGAAGT  
40901 TTGCAGCGTG ACTTGTTTTA TTCTATTCAT TGAGGTAGTC ACAGAGGCCC  
40951 GACCACATTC AGAGGAGGGA CATACTCTG CTGGGACAAG TGTAAGAGAA  
41001 TTCATGATCA TGTTTTAAAA CCACTTTTAT TAGTTTCCTA TTGCTGCTGT  
41051 AATAAATTAC CACAAC'TTAA TGGCTTAAAA GCCACACAAA TTTAATATCT  
41101 TACAGTCTCG CAAATCAAAA GTCTGAAACG GATCTCACTG TGCTAAATTT  
41151 AAGGTGTTTC TAGGGCATTC TGGAGGCTGT AGGAGAGAGT CTTGTTTTTT  
41201 GCCTTTTCTG GCTATTAAAA GCTGCCAGCA TTCCTTGGCT CCTGGCTGTC  
41251 TATTTGCATC TTCAAAGCCA GCAGTAGCTG GTCAAGTCTT TCTCTGTCT  
41301 CATCACCTG ACCCAAATC TGCTAAATCT CCCTTCCACA TTTGAAAAAC  
41351 CTTTGTGATT ACTTTAGGCC CACGCAGATA AATCAGAAAA TAATCTCCTT  
41401 TTTCAAGGTC AGTTGCTTCG AAAC'TTCTT TCTGCCACCT TGATTCTCTC  
41451 TTGCCATGCA ACGTAATGTA ATCACAGGTT CTGGGAATTA AGTTATGGAC  
41501 ATCTTTGATG AGCAATTATT CTGCCTCATA CCAGTATAGG GTATTAGCTT  
41551 GAAAGGACAC TGCAGACTCA GTTAAATTAC TAGATCTATA AATACATGCC  
41601 TTTTCCATC AAGAAATTAA GGCAGCTGGG TCTTATGCCC TGGGACATTG  
41651 CTTCTTTTGG ATTTATAAAA TAACAAAATT TGTTGATTAA TGGTCTATCA  
41701 GTAAATATAA TTTCTTATGT GACTATCAGT GATATATATG GGAAGCACA  
41751 TATCAGCTTA TTCTTGTTCT TTAAATTACT ACCCTGTAC TTCATGTAAT  
41801 AGTATTGCT AGTGATGATG TGCTTTTACA GATGTAATTT AATGTGGAAT  
41851 AACAGCTTTG TTTCTACAAA ATTAGAGTGG TTTTAGT'TTT TGAATAAAGG  
41901 TCTCTTTTCT CTTGTCTTAA GTCTGTAGTC CACTGAGTAT CTAGAGTTAA  
41951 ATAATAGAAA AGCCTGGCCA GGCGCAGTGG CTCACACCTG TAATCCCAGC  
42001 TCTTTGGGAG GCCGAGGCGG GCAGATCACA ATGTCAGGAG ATCGAGACCA  
42051 TCCTGGCTAA TGCGGTGAAA CCCCCTCTT ACTAAAAATA CAAAAATTAG  
42101 CCAGGCGTGG TGGCAGGTGT CTGTAATCCC GGCTACTCGA GAGGCTGAGG  
42151 CAAGAGAATC ACTTAAACCC AGGAGGTGGA GGTTGCAATG AGCCAAGATC  
42201 ACACCCACTG CACTCCAGCC CAGGCAACAG GGCAAGACAC TGTCTCAAAA  
42251 AATAATAATA AGAAGAAAAT AATAATAGTA ATAGAAAAGC CTAAACATTT  
42301 TACCTTTTTT TCTTAGGGAA TCAAGTTAAA AGAGCTGTTA AAGCTCTTTT  
42351 TCCTACAATA AGTAAGTGTG GGGTAAATCC CAACTTCTC ACAGTCAGTT  
42401 GAACTACAAG AAGCTGGAGG CAATTGGCAG GCCTTTGTTA AGTCCCACCT  
42451 TTGACTCAGC TCTGGCTGAA GGATCATACC TGGCAAGAGA GTGTAAAAA  
42501 CACTTTGATT TTTTCTATTG TTTATCCTTT TAATGATCCT AAGAGACTCA  
42551 AGAGTACATG CCATCATTTT GTGTTTGGCT CATTTCATAT TCAGAGGAGT  
42601 TTATTACTCT TTCAGTAGTT TGTTTGTTCG TTTGTTTGT TTTTGAGACA  
42651 GGATCTCGCC TTTTGGCCA GACTAGAGGG CAGTGTGCA GTCTTGGCTC

FIGURE 3N



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Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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42751 ACTGTAACCT CCACCTCCCA GGTTCACGCG ATTCTCCTGC CTCAGCCTCC  
42801 CAAGTAGCTG GGATTACAGG TGTGGGCCAT CACACCCGGC TAATTTTGT  
42851 GTTTTTAGTA GAGATGTGAT TTTGCCATGT TGGCCAGGCT GGTCTGGAAC  
42901 TCCTGACCTC AGGTGATCCT TTGGGAGGCC TTGGCCTCCC AGAGTGCTAG  
42951 GATTATAGGT GTGAGCCACT GAACCTGGCC TCTTTCAGTA GTCTTTAAAT  
43001 GATCTTGCTT ATGGTGCTTC TTATCCCTGT TTATTATCCT TATTAAATTT  
43051 AATCAATAAA TATTTTTCTC TTTTAAATG ATTCATATAA ATAGACTTAC  
43101 CTGAGAGATA TAGGTTTCAGT TCAGAGCACC ACAATAAAGT GAATATCATA  
43151 ATAAAGCAAG TCACATAAAA GTCTTAGTTT CTTAGTGATC ATAAAGTTTC  
43201 TGTTTACACT ATGCTGTAGT CTTATGTGTA CAATAGCATT ATGCTTTTAA  
43251 AAAAAGTAAT ACTTTAAATTT AAAAATACTT GATTGCTAAA AAATGCTAAT  
43301 AGTAATCAGT GCCTTCAGTG AATTGTAATC TGTTTTGCTT CTGTAGGGTC  
43351 TTGCCTTGAT ATTGGTGGTT GCTAGAGGTA GGACTGGCTG TAGCAATTCT  
43401 TAAAATAAGA TAACAGTGAA ATTTGCCGCA TTGATTGACA CTGCCTTTCA  
43451 TGAAAGATTT CTCTGTAGCA TGTGATGCTG TTTGATACCA TTTTACCTAC  
43501 AGTAGACCTT CTTTTCAAAA TTAGAGTCAT CCTCTCAAAC CCTGCTACTG  
43551 CTTTATCAAC TAAGTTTAAAG GAAAATTCAA AATCTTTTGT CTTTTTAAAC  
43601 ATGTTTCAAC CATCTTTACC AGGACTGGAT TCTACCTCAA GAAACCACTT  
43651 TCTTTGCTCA TCCATAAGAA GTAACCTCCT ATACATTCAA GTTTTTTAAA  
43701 TGAGATTCTA GCAATTTCAGT CACATCTTTA GGCTACGCTT ATCATTCTAG  
43751 TTCTCTTGCT ATTTCCACCA CTCTGTAGTT ACTTCTTCAA CTGAAGTCTT  
43801 GAACCCCTCA GAGTCATTCA TGAGAGTTGG AATCAACTTC TTCCAAACTC  
43851 CTGTTAATAT TGATATTTTG ACCTCCTCCC ATGAAACGTG AATGTTCTGG  
43901 ATGGCATCTA GAATGGTGAC TACTTTTGA ACATTTTCAA TTTATTTTGC  
43951 CCGGATCAAT CAGAGAAAGTT GTTATCAGTG GTGGGTTTCC AAGTTGTCAG  
44001 GGGCGAACCA TACAGATCTT CAGCAACCTC AACTCTTGCC TTCTCAGAGG  
44051 AAAGAATTCT ACGGAGGGAC ATAAGGCAGA AAAAGAGACT GAGGCAAGTT  
44101 TTAGAGCAGG AGTGAAAGTT TATTATTAAA AAGCTTTAGA GTGGGAATGA  
44151 AAAGAAATTA AAATACACTT GAAAGAGGGC CAAGTGGGCA TCTTGGAAGA  
44201 CAAGTGCCCC ATTTGACCTT GGACTTAGGG TTTTATATGT TGGCATACTT  
44251 CTGGCATCTT GCATCCCTAT TCCATTGATT CTTCTTTTGG GGTGAGTTGC  
44301 CCACATGCTC AGTGGCCTGC TAGCACTTGG GAGGGGAGTG TGCACAGTGT  
44351 ATTTACTGGA GTTGTATGCA TGCTTACCTG AGGTGTTTGT TGCTTACCAG  
44401 CCAAATGTCC CTAGGAGGTC ATATTCATAA ACTCCATGAT TTTGCCTCTA  
44451 AATGTGCATG CTTGAGCCCA CTCACCCAAC TCCTGGGATC TTATCGGAAA  
44501 GCTGCCGATC GCTAGTTTCA GGTGTTTCTA TCTATTGGAA GATGGCCTTT  
44551 CCCTGATGCT GGCTGCAACC AATTATTACT TTAGAGAGAG AGCATGAGAG  
44601 CTGTCTCACC ATCATCCCTT GATGGTTGCC TGACATTCCCT GGTGGGGTTG  
44651 GGAGGATGCC TGTCTGCCCC TGCTCATGCC TGACTAGCTA CCTGCTGTAA  
44701 CAAAAGTACT ATCTATGGTA GCTGTAGCCA TAGGAAATGC ATTTCTTCAG  
44751 TAAAACCTAA AAGTCAAAAT TAGTCTTTAA AACAACATGA ATCTCCTTGT  
44801 ACATCTCCAT CAGAGCTCTT GGAAGACCAG GTGCATTATT AGTGATGAGT  
44851 AATGTTTTTAA AAGGAATCTT TTTGTCTGAG CAGTAGGTCT CAACAGTGGG  
44901 CTTAAATAG TTAGTAAACC ATGCTGTAAA CAGATATGCT GTTATCCAGG  
44951 CTTTGTATT CATTATATAG AGCACAGAGA GAGTAGATTG GCATAATTTA  
45001 AGGATTACTT AAAAAAAAAG TCTTTGATTA CTCTCAAAAA AAAGTCACGT  
45051 CTCTCACTTT ATATCAACAG CTAAAAATGG CCAGGTATTG TGGCTCACGC  
45101 CTGTAATCTC CATGCTTTGG GAGGCCAAGG CAGAAGGATC ACTTGAGGTC  
45151 AGGAGTTAGA GACTAACCTG GGCAACATAG TAAGACCCAT CTCTACAAAA  
45201 AAAAAAAAAA AAAAAAGAAA GCCAGGTGTG GTGGTGCACG CCTGTAGTCC  
45251 CAGCTACTCA CGAGGCTGAG TCGGCAGGAT CACGCCACGC CAAGAGACGT  
45301 GACTTCTGCT TTCAGTTGTA CACTTAGAGA CCATTGTAGG GTTCTTAGTT  
45351 GGACTAATTT CAATATCATT GGGTCTCAGG GAATAGGGAA GCCTGAGAAG  
45401 AGGGAGAGAC AGGGGAACAG CCAGTTAGTG GAGCAGTCAG ACCACATACA  
45451 ACACTTATTA AGTTCACTTT CTTCTATGGG CATGGTTTAT GGTGCAGTAA  
45501 AACAACGTGA ACAGGAACAT CAAAGATCAT TAATCACAGA GCACTGTAAAC  
45551 ATATAATAAT AGTGAAAAAT TTCAAAGTAT TGAGAGAATT AGCAAAATAT  
45601 GATACAGAGA CACAAAGTGA CCACATGCTG TTGGAAAAGT AGTGCTGATG  
45651 GACTAGCTTG ATGCAAGGAT GTCATAAACC TCAATTTGTG AAAACTGCAA  
45701 CATGTGTGAA GCACAGTAAC ACAAAGCATA GTAAAACAAG ATATGTCTGT  
45751 ATATCAGTCA AAATATTGGG CAACTCTGAT AAGTTTGTCC ACTTAACATT

FIGURE 30



Attorney Docket No. CL001163  
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GTACCACTTA AGATGAATAG CATCTACCAT TTCCGTCATT TGTAATATA  
45801 TAGGAGGACA TAATCACATA ATCTTGAAGT AAAAGACAGT GCTTAAACT  
45851 GAATCAGTTA AGTTTTATGA AAAATACTTC ATATTGTAAT TTTAAAAATA  
45901 TATATTTTTT AATTTCATA GCTTTTGGGT TACAAGTGGT TTTGGTTACG  
45951 TGGATGAATT CTATAATGGT GAAGTCTAAG ATTTTACTGC AACTGTCACC  
46001 CAAGTAGTAT ATATTGTATC CAGCATATTG TCCTTTTTTT TTTCTTTTTT  
46051 TTTTTTCATT TCACCATGGA CTAATGAAAA TTTTGTAGG GACTGACATT  
46101 AGGGCACCCT TGAGCTACCT TGAGCTAAAG GAAATAACCC TTGAATTTTT  
46151 TTCTGTTTGG CCTAGAGAAT GTGGTTTGT TTTGTAAGTGA ATTCATGGGA  
46201 TTGTTAAGGT ACAAGATTTT GCTTTAGTTT TATTGTACT AGGATTTTGC  
46251 TATATTAATA CAATGTGAAA AGAATCAAAA GTGTTAGAAA TAAATGCATA  
46301 GAATGTGAAT TTCAGGCATG TGAGTAGAGG ATCTCTGCTC CATAAAGAGT  
46351 TCTGTTGTTG TTATAGGTTT CATCAGGCTT GTTCATCCCC AGCATGGCCA  
46401 TTGGAGCGAT CGCAGGAAGG ATTGTGGGGA TTGCGGTGGA GCAGCTTGCC  
46451 TACTATCACC ACGACTGGTT TATCTTTAAG GAGTGGTGTG AGGTCGGGGC  
46501 TGATTGCATT ACACCTGGCC TTTATGCCAT GGTGTTGCT GCTGCATGCT  
46551 TAGGTAATAT GGCTGTGTCT GCCTGTGTGT GGATGTTTG AAGTCTGAGA  
46601 GAGCCAAGAG AAAGTGGGAC ACATTCTTGC TTAATTGGT GCGGATTGG  
46651 TTGAGTAAAG GAGGGTGCCA GGAGGAGATG TTTTAAACAGA TAAGAAACAG  
46701 TAGTACTATT AGGGTATTAT ACAGTACCGG TTTTCTGTCT TACAACATTT  
46751 GTTAATACAA GAATTTAATG GCATTAGCAT ATTGTAATAT AACTTAATAC  
46801 ACTATGGCAG AAGCCATCTA AGTACAACAT AAGCTTAATT TGAATCCTGA  
46851 CCAAAGATGT CTTTGATTCT TTCATCGTTA AGGATCTTGG CTTACCTATA  
46901 ACAACTATAG CATAATACCT AAGATTAGCA TTGCAACAGA GTTTCAGAGT  
46951 AGGTTTACTT TGGTTCTGAA ATGATTATT TTTAGCCTTA GTAAAAGATG  
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47051 AGGTAACCTC ATTTTAATGA GAAGAAAAGC AAAATACCTA CATTAAGTAC  
47101 TTGAGTCTAT TTAATGTCTG TTAGGGCAGG AAAAAATGGT TATTGCTTTT  
47151 CATATTTAAA ATATCAGCTA CACTCTGGTG ATAATATTAA TGGTTGCCAT  
47201 TTTGACCAGT TTTGTTTAGT GAATAAAAAA TATGTGATTA TTGATCTTTA  
47251 AAAATGTAAT ATCAATTAAG AGGAAAGGAC AGACTCATT TCACCAAAGT  
47301 AGCAAGTATT TATTAATGT CCACTTTCTT TTTAGCATTG TGCTAGATAC  
47351 AGTGCATAAT AAAAAAGAA CATGGACCCA ATCTCGACTC TAATCAAGTT  
47401 GAGGAGACAA GATGAACACT GAGAATACAA TAGTGAGGAA TACTAACAAA  
47451 TATATACAAAG GTTAAAAGAG TCTAAGTATG GTAGGAATAT AGGGGAAGAA  
47501 AGAGCTGAAG TACTTCAGGA AGAGTAGAAC ATGAGGCTTT ATTTAAAGA  
47551 TTAGCAGAA TTAAGGAAA GGTGACTTTG TTGAAGATTA TAATGTGAAG  
47601 ACAAAGGAAC GAGGATGGGA ATAAATTTTG TATTCATGAG GCTTTGAAGA  
47651 AATTGACTCT AGAGAGTATA TTTTGGGTAC TTTTGGGAAA TGAAGTTGGA  
47701 TTAGTGAGAA GGAACAGATT ATGAAAAGAC AAGAAACCTG ATTAATGTCA  
47751 GGATGATTTT ATATTTGAAG TTGGTCAGAT TTATGGCAGT CCTGGCTTTG  
47801 CCATTTTTAG TTTGATGACT TTGAGAAAAGT TCCTTCTTGA AGTTTAAATT  
47851 TTCTGTATAT AAAAAGTAAT AACACCTGGT GATCTGCTAG GTTTGTTTTG  
47901 AGGATTATAT GAGATAAAT GCATGCAAAA CTGTTATAAT AGTGCTGGT  
47951 AAAATAAGTG CCTAGTTTA AAAACAAGTC TTTGTAAACT GCTTAGGACA  
48001 TGCCTGGTAT AGGGTAGGTA TGTAATACAT AGTAGGTAGG ATCTGTCTCC  
48051 TTGCTATTTT TAGGTAAAAA AACAAAAGGA AGAGCTTCAG CTTAATACAG  
48101 TATGAACCTGA CGAGCCCTGG TAGGTTTTGG AGCAAAAGAG CAACACAGTA  
48151 AAAGTAGTAC TTAGGAAAAG TTAACAAGGG AACATGGCTT ATACAGTGGT  
48201 AATGGGGCCT GGAGTCAAGG AGGTAAGATA AAATGGTATT ATAATTAAGG  
48251 AATAGCCAGG CACGATGGCA CATGCATGTA ATGCCAGCTA CTGGAGAGGC  
48301 TGAGGTGGGA GGATCATGGG AGTCCAGGAG TTTGAGACCA GCCTGGGCAA  
48351 CTGAGTGAGA CCCCAAATCC TAAAAAATAC AAAGTAAAAA AGGAATAAAG  
48401 TCATGAGGGC TTGACTGGA TTGATAACAG TGAGAAATACC GAGAAAGGGA  
48451 CCATAGGCAG TGTGAACGCA GCTCACTGCA GCCTCAAACC CCAGCCCAAA  
48501 CGAGCCTCCC ACCTCAGCCT CCCAAGTAGC TGGGACCACA GACATACACC  
48551 ACCATGCATG ACTATTTTTT TTAGTTTTTA CTTTGTGTA GACAGGGTCT  
48601 CACTGTATTG CCCAGGCTGG TCTCAAACCT CTTGACTTAA GTGATCTTCC  
48651 TGCCTTGGCC TCCCAAAGTG ATTACAGGCA TGAGCCACAG TGCCTGGCCC  
48701 AAATAGTTTT CTGTGAGTGA ATATTACTTG CATCGTTAAT GTAAATCAAA  
48751 GGCATCAAAG TATTTTACTC TTTTGTAAAA AAATTTAGAG GAGAAATTTA

FIGURE 3P



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Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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801 TTATATTAAT ATTCTACCCA TATATGAGTT TAATTTGTAA ATTGTAGCAA  
48851 AGCATGATGT GCTTTACTAA ATTCCTTTAT AATTAGAATA AGCTTTTATA  
48901 AGGGTGAAAT TATGCTTTTG CTACAGCACT AAACCAAAAT GGCAAAATTG  
48951 TTTTAGTCGG TAAGCTTTGC TTTTAAAAA TATGAAATAA ACAGGTTTTT  
49001 AAAATGTTAT TTTAATAGTC TTCTCTGTTA TAAACAAAGA AAATTGGTGT  
49051 TTCTCTAGAG CTTATTAAAA GTAGTGATTA TTGTCCTAAA AGAGGAGTAG  
49101 CAGTTTTAGA TGCTAATGCT TTTCCCTGAC TGAGTTCTAT TTGCCATTTA  
49151 GTTTTAACTG CCTAGTGCAA AAATTCTAAT AAAATGTAAT GATGAGGATC  
49201 CTGTCCTTCC TGACCAGTGG GTGCTTACTT TTTTCAGGTG GTGTGACAAG  
49251 AATGACTGTC TCCCTGGTGG TTATTGTTTT TGAGCTTACT GGAGGCTTGG  
49301 AATATATTGT TCCCCTTATG GCTGCAGTCA TGACCAGTAA ATGGGTGGA  
49351 GATGCCTTTG GCAGGGAAGG CATTATGAA GCACACATCC GATTAAATGG  
49401 ATACCCTTTC TTGGATGCAA AAGAAGAATT CACTCATACC ACCCTGGCTG  
49451 CTGACGTTAT GAGACCTCTA AGGAATGATC CTCCCTTAGC TGTCTGACA  
49501 CAGGACAATA TGACAGTGGA TGATATAGAA AACATGATTA ATGAAACCAG  
49551 CTACAATGGA TTTCTGTGCA TAATGTCAAA AGAATCTCAG AGATTAGTGG  
49601 GATTTGCCCT CAGAAGAGAC CTGACAATTG CAATAGGTAC CCTTTCAAAA  
49651 ATATATATAT GTATATATGA GATGGATTTC TGGAAGAAAG GAAAGCAATA  
49701 AGCAGTAACA TTTAATGGGT CGGATTTGTG GGGGCAAGGG ACATTATTTC  
49751 ATGTCCCTTA ACATCTTCTG TTCTTTAAGA AAGGAAGGTA TGCTTCAGTG  
49801 GATGATTTTC TGCTATATAT CACAAAATCT GTATTTTCAGG TTTGTCTTTT  
49851 GATCCGGCAT GTACCAGAAA TTGGAGTCAG ATTATTTTCC CACTCAGATA  
49901 AGCCTAGATA AGTTGATCTT GGTTATTCAA AACAGCATGT AATATAAGAC  
49951 CTTAGCTAAA TGCATTCACT CAAATACATT CTTGTATTTA ATAAAGTTGG  
50001 CTTATTGGAA TACAAGTTAT TGAAAATCTC ATCTTCATCA GTCTCTTTCA  
50051 TATTAGAATA ACACGTGTTT GCTTTATCAG TCTTTGGGGT TAGAATTATA  
50101 ATATTAATTT ATAATATCTG ATTTAAAGTG ACAATCACTG AGATTTTAT  
50151 TTCTGATCAA ATGCCAGGTT GAAAAAGTAT AACGTATCAG TCCTGTTGTG  
50201 TTTTATGCAG ACTTTCCTGA AAATACGTGT TAAAGGTATT AGCCATAGTG  
50251 TATTTCTTGG AGATAAATTA AACTTTCTAT AGTTCTGTTT CTCTAAAATT  
50301 TGTTTTTCTC TTACCTTAT AGTCCCGCAT TATTGATGAG GAGACCATA  
50351 AGACTTAATA TTTTTTTGAC ACAATCTTAT ATCTCTTCT CCAACCCCTA  
50401 AAAAGTGAAT GAGGATAGGT ACATCAAGCC ATTGCTTTGT TACTCCCCAG  
50451 GTTTTAGTGC CAGACCCTGA ATGGAAGTGT CAAGCCTTGG GCCTGTCTGA  
50501 AAGGTCATTC CTGTGAGCAT ATCATCTCCC TTCCAGCTTA CCTCTGTGGC  
50551 CATTGCAAAA GGATTTAAAA ATAATTTTGG TGCCATTTGA ATGGCACAAAG  
50601 ACCAGACAGT GTATGTGGGG GAGTGTCTT CAAATCAAC TGGAACTCT  
50651 TTAATTTGTA AGAACCTTA AGCAGAGAGA GAAAAAGAA AGGAAAAGAA  
50701 AAAAGATCCT ACAGAGAACA CCCTGTTTCAG TTTGGGAACA GGCTACAGCT  
50751 TTGGATTTTT CAAGGCCTAG CATTCCCATC ATTCTAAATT TTAATTAGCT  
50801 AATACAATAG TAGTTGCCAG AGCTGATGAC ATAGTATTTT GTCATGCTTG  
50851 GCTCCGTTCA AGCATTTTAG TTTTTTAGCC ATTACCATGG CTAGACCAG  
50901 TCAAAAGAA TTTTATTGTT TAAGATTCCC ATTATCCTAG TTTTACTAG  
50951 TAGCCAGCCA AAGAAAAGAA AAAGGAGGTC AGAATTCGG TATTACATA  
51001 GAAATTTAAG GGGAAAAGGC CAGGCATGTT TTTAAAGTGT GGAAATTAAG  
51051 AACTATTCAT TATCCCACTG ATTGTGTGGA TGTGTTTTTT AAAGTTTTGT  
51101 TACTGTCTTG AGAGAGAGAA TATTGAGATA GGACATAATG TTGGTTTAAG  
51151 GGAATGAGGG TACTTTCTGT AGGTGAGGTG CCAAGCCATG TCATCAGAAA  
51201 TGTTAGTCAC ATGACTTTCT AAGCACACCT TAAATGTTTT ACCGTGTATG  
51251 TTTTGTAAA GTTTTAAAT TTTAACTGGG AAAACAGAC CTGTATATTA  
51301 AGTTTTATAT ATATATATA ATTTAAATTT ACATATATAT GTTTATATAT  
51351 GTAACTTTAA TATGGGAGAG ATATATATTT CTATATCTC TATAAAAAAA  
51401 CATATCTATA TATGAAAATT ATGTACGTAA ATGTTAATTT ATAATTAATT  
51451 ATATAAATAT TAACATAAAT ACATTATATA TATAGAAAAC CTAGTGTACA  
51501 GATCTGTATA TAAATTAATA ATGTATGTGT TATATATAGT TACATCATAT  
51551 AATACATATA ATTGATATAT ATAATGATAA ATACTTTATT GAAGGATGAA  
51601 AAAATTTCCA TGCTGTCTCA TAAAATAAGA TGTTGACAT ATGCTAAACT  
51651 AGATAGATTC TCCTGTTTCA TACTAAAGCA GAATGTTGTA AAATATTAAA  
51701 TCCAAATGAG ATGTCTCAGA TTAAGGCCAT TTCAACAGGA ATGCTGAGAC  
51751 TTTAAAAAAA AAAAAAGTCT GAGGCTGGGC GTGGTGGCTC ATGCCTGTAA  
51801 TCCAGCACT TTGGGAAGCT GAAGCAGGTG GATCACTTGA GGCCAGGAGT

FIGURE 3Q



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51901 TTGAGACCAG CCTGGCCAAT GTGGTGAAAT CCCGCCTCTA CTAAAATACA  
51901 AAAAAAATAC ATGGGTGTGG TGACGCATGC CTATAATTCC AGCTACTTGG  
51951 GAGGCTGAGG CAGGAGAATC ACTTGAACCT GGGAGGTGGA GATTGCAGTA  
52001 AGCCCCACCA CTGCACCTCA GCCTGGGCGA AGACAAAAC CCTGTCTCAA  
52051 AAAAAAATAA AGCCTGAATT ATATCAGCAA ATGAAAACCT TAATGTTGTT  
52101 CTCTGTTTCA GAGGCCCTTG AATGAATAGC ACTAAAAATA TTTTTTAAAA  
52151 AATGAAGAAA ATGAAAATTG TAATGTTTCT TATTTAAAAG GCCCTTGAAT  
52201 GAGTAGCATC AAAAATATTT TTAAATGGGA GGCCAGGGTG GGAGGTTTGT  
52251 TTGGCACCAG GAGATCAAGA CCAGCTTGGG TAACATAGCA AGACCTTTGT  
52301 CTCTACCAAA AAAAAAAAT TGGGTGTGGT GGTGCCACCT GTATTCTTAG  
52351 CTACTGGGAA CACTGATGCA GGAGGATCCC TGGGACTCTA GAGTCCAGAG  
52401 TGAGACCCTG TCTCTAAAAC AAACAAACAA ACAAAAACCT TATTTATGTA  
52451 AAAGTAATAC TTGTTTTTTA AATTTTATTT ATTTTAAATT GATAAAAATT  
52501 GTATGTATGT TTATGTGATG TATATATTGT GGAATGGTTA AATCAGGCTA  
52551 ATTAACCTAG ATTTTTTTGT TGTGTGGGGA GAATATCTAA AATCCCTCTC  
52601 CTTAGCAGTT TCCAAATGAA ATGAAAGAAT AAAAGTGATT TATTTTTTTG  
52651 AGACAGCATC TCACCTGTT TCTCAGGCTG GAATGCAGTG GCACGATCTT  
52701 GGCTTACTTG ATCCTCGACT TCCCTGGCAT CCGGTGATCC TCCCCTTCA  
52751 CTCTCCTAAT TAGCTAGGAC TACAGGCATG CGCCACCATG ACTGGCTAAT  
52801 TTTTGTATTT CTTGTATAGG CAAGGTTTTG CCATGTTGCC CAGGCTGGTT  
52851 TCAAGCTCCT GGGCTCAAAC GATCCACCTG CCTCAGCCTC CTGAAGTGCT  
52901 GGGATTACAA GTGTGAGCCA CCACACCTGG CGAAAAGTGT TATTTTTTTA  
52951 AATGACAAAT TTAAGTCAAA GAGATTGAAT GTTCACTTCT GGTACTTTGT  
53001 ATATAAGAGA AACATTCAT TAAATAATTT TTTAAACATT TCTAAAATTA  
53051 CATATTTTGT CATTAAATGT TTAACAATC AGTATAATTT CATTGATACA  
53101 GTGTTTGTTA TTTTGTCTGT GTTTAAGATT GATAATTGGG GTTAGTTTAA  
53151 ATTCAGAATG TTATTCTATT TAATGTCACA CTTTATGCTT TTTTATTTTG  
53201 TATATCTATT AATGAATTAT TTTAGCTATA GTTATTACTG TTTTAGAGAT  
53251 GAGGTCTTCT ATGTTGCCCA GGGTAGACTT GAACCTCTGG GCTTCAGCAA  
53301 TCCCCTCCTC AACCTCCGGA GCACATGAGA TTAGAGACGT GTGCCACTGT  
53351 ATCTGGCCTG CTGATGTTAT TTTTAATTCT TTTGTCTTTT AACTTTTATA  
53401 CTAGAGTTAG AAATGATTTA CAAACCCTAT TGCAGTTTAA GAGCGTTATG  
53451 AATTTGACTA TATATTTCTT ATAACAACCT AACTTCAGTT GCTTACAAAA  
53501 ACTACAGAGT TTTACTCCCC CGTCCACATT TTATACTATT GATGTCACAC  
53551 TTTACATCTT TTTATTTTGT GAATCCATTA ATGATACTTC TGGTAGTTTT  
53601 TACACTCCAC TATTCAGTTG TCAGACACCA TTCAGTTGTT AGATTGTTAT  
53651 GAGCTAAAAG CAACCTAATG GGTATTTTTC AAAAATCATT TATGTCAATT  
53701 GCTAATGGAC CTGTTTTCTA TGCCATGATC ATGCTTTTTT TATTTTTGAG  
53751 ACGGAGTTTC ACTCTTGTG CTTGGGCTGG AGTGCAATGG CGCGGCCTCA  
53801 GCTCACTGCA ACCTCCGCCT CCTGGGTTCA AGCGATTCTC CTGCCTCAGC  
53851 TGGGATTACA GGCATGTGCC ACCGTGCCGG CTAATTTTGT ATTTTLAGTA  
53901 GAGACAGGGT TTCACCATGT TGGCCAGGCT GGTCTCGAAC TCCTGACCTC  
53951 AGTTGATCTG CCCACCTTGG CCTCCCAAAG TGCTGGGATT ACAGACGTGA  
54001 GCCACTGCGC CTGGCCTGAT CATGCTTTTA AGGTGGTTGA GTAAGTACTA  
54051 GTTGCTGGGG CTTTACTTAG TGCCCTCCTA CTCAAATGTG TTAGAACATA  
54101 GTTAAGAAGG CTGTAGTGTT CAAAAGGAGT AAAAAGCAGT GCAGTGTTTG  
54151 CAGTAATATC TGCTTCTCAA TTTAGGACTG ATGCTTATTA TGGCTTAAAT  
54201 GTTTTTGTAG TAAATTTTGT ATTCAAAAAA TATATTTTTT TTTCTTTTGT  
54251 CGACAGAGTC TTGCTTTGTC ACCCAGGCTG GAGTGTGGTG GTATGATCAT  
54301 GGCTGACTGC AGCCCTGACC TTCCGGGCTC AAGTGATCTT TCCACCTCAG  
54351 CCTCCCAATT ACTTGGGACC ACCAGCATGC TTGGCCGATT TTTTTTTTTT  
54401 TTTTTTTTTT GTAGAAGCAA GGTTTCCCTA TGTGCCAAG GCTGGTCTTG  
54451 AACTTTAGGG CTCATGTGAT ACTCCTGCCT CGGCCTCCCA AAGTGTTAGG  
54501 ATTACAAGCC TGAGCCACCA TGGCCGGCCA AAATATTTTC ACTATAACAA  
54551 ATATCATATC TGTATATACT CAGTTTTAAT ACTAACTCAA AGTAGAAACA  
54601 TAAAGCTGAA TGACTATTTT ATTTTCAGAT TCTCTCCATT GAGTTTCCTT  
54651 CTCCGTCTTG TGTGATCTCT GAACTTTTCT CCATCTTTCG CACTTCTTGT  
54701 CTAGCATTTT TTTTTTATCA GCAGTTTCAT TCAGATTTT TTTTATGTTT  
54751 TTTCAACGGT GGAGTGGAAG TAGGCAGCAG GACAGAAGAA CTTGAAGCAG  
54801 AGCACACTGG AGAGGAGAAA TTAACAAAGC CTTTATGAAT AAAACAACCC  
54851 CCCAATATCA GTCTGTGTGC ATTATGAGCA TAATTGTACT TTCATCTCAT

FIGURE 3R



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Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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501	CTGTAATGTT	CATGACTTTT	CTAGAAAATT	ATACTTTAAC	ATGAGAAAAG
54951	AAAAAGAACC	AGCTAATTCA	TAGGGATGGA	GGACACAGCA	TAGTCAAAGC
55001	AAGAATGAAA	CTCTCTTTAG	TGCCACCTCC	AGTGCAGAAT	AAGTAACATT
55051	CAGCAGAGGC	AGGTTTCATT	TGATAATGGA	TTCTTATAAT	AAACTGCGCT
55101	CAGAATTTGT	GCAGGTTTGA	AAATCCCGTA	TTCCAAACCC	ACTTCCTTAG
55151	CCCCAAGTT	AGAAAACAGC	TTCAGTAAAG	AAAATTGTAC	GATGATATAA
55201	CTTTACCAAA	AAATAATTTC	TTTCCATGAA	GATGATATAT	TATTGTTGAC
55251	TTCTAATTCA	ATCAAATATA	AACAATTGCT	AAATGGCTTT	TCAGTTGACT
55301	CCTTTCTTGG	TTAAGGAGAA	GATAGGAAAA	AATGAAGGGA	TCAGAACTCA
55351	TAGGATACAT	TAATTTTTTT	TATCTCTGAA	TAAACAGGTT	GCCTACTTAA
55401	AAATCTATCA	GTTTAAAAGT	GTTGGTCTCT	TCTCTCTCTT	TTCAGAAAGT
55451	GCCAGGAAAA	AACAAGAAGG	TATCGTTGGC	AGTTCTCGGG	TGTGTTTTCG
55501	ACAGCACACC	CCATCTCTTC	CAGCAGAAAG	TCCTCGGCCA	TTGAAGCTTC
55551	GAAGCATTCT	TGACATGAGC	CCTTTTACAG	TGACAGACCA	CACCCCAATG
55601	GAGATCGTGG	TGGATATTTT	CCGAAAGCTG	GGACTGAGGC	AGTGCCTTGT
55651	AACTCACAAT	GGGTAAGTCT	GGTACCACAG	GAATCAGTTC	ACTTGCTAGA
55701	ATATAGGATC	CTTTTTTAGTG	GAATCTATAT	AGTTATTAGG	GGAGCATGTG
55751	AGTCAGCTCC	CAGGTGGGAA	AGTCTGTCCT	ATGGTATAGT	CACAAATATA
55801	GGATCAGTCA	ATCAAATTTT	ACATTTACTA	AGGAATAAGA	AAGATGTCAT
55851	CTGCCTGCTC	TTTGCCAAAC	AGTGACATTT	GTAATAATA	CCTCAAAGTT
55901	GGAAAAGAGG	TGCTGAAAGA	TCTCCAGCAT	GAAAGCATGT	TGAGCTTAGA
55951	GTGCTTCTTT	TCCTAGGGAA	GAGTGGACCT	AACCTGCATG	GAGCACTGCA
56001	AAAACCTGTT	TTATTTTTGT	AAATGTTTCA	TTTTTAGTAT	ATAAATTTCT
56051	AGTACAATAA	TAAGTTTCTA	GATATTTTGC	TATTTACTCT	TTCAGCCAAT
56101	ATTTGATTTA	TCATGTAATG	AAGGAAAAGAA	TATATACTTA	AATGAAATTT
56151	GTAAATGAGC	TAAAAATCTC	CTTTAACAAA	TGCTTTGTTT	CCTTTTGTCT
56201	ACCTTTCTCT	ATACACAAAT	CTTTTATATT	TATATAACTG	CTAAGGACAA
56251	ATAAATACCT	ATGTATTTAA	AATGTATACA	TTGATAATTT	ATTTTTCCAC
56301	CTTTTACACA	TGAAGTGCCA	GTGTTTCTCC	ATTGACAGGA	ATATAGGAAA
56351	GAAACAGATG	TCACGGGGGT	TGTGGAGACC	TTAATGCACA	GAATTGATTT
56401	AGCAAATACA	CTACTTCGTC	ACCACTGCTC	TCTTTTCTCG	GACCTGGGAT
56451	CTGTTTCTCC	ACACTTCTTT	CTTTAGGACC	CTTCATTTC	ACTATATATT
56501	CTTTCTTGTT	GAACCTAAGA	ATGTTGTTTT	ATCCGAAGGC	AAATACCAAA
56551	AAACAGAGGG	TATTCTTGGA	TTATGCATAA	ACTGGATGGC	TAATCCTGAA
56601	CAGCGTAAAG	CTGGTTGAAA	TTCTAAACAG	AGAATCATAG	CAGTTTTTTG
56651	TTGTTTTTTT	TTTTTAACAT	GTTGTAGAAA	ACACATTGGT	GACAGAATAC
56701	ATGACTCCTG	TCCAGAGAAA	GGAGAGAAAA	AGAACAGAAA	GGAAGGAAAT
56751	TTGTTTATTG	AACACCTTCA	TATTTTCTCA	TTTAACTTTG	CAGGACCTCT
56801	GCAAAGTAGG	TAGTTATATC	CCTACTTTAC	AGATGTAGTA	ATTAAAGCTC
56851	AGGAAGCTTT	AATAATTTGC	CCAAAGTCAT	GTGGTGAACA	AGTCATGGTT
56901	CAAGGAATCA	GACTGTCTTT	CCTACTTTAA	AACCCAGCCT	CTTGCTACTA
56951	TTTTGCACCT	TAAGTGACTG	ATAGAAATCC	TCTTTCTTTG	TGATTTCTTA
57001	AACTACTAAA	ACATTTTCTT	GGCCAATATA	TTAGATTGAG	TTAAGAATAG
57051	AAATATGAAA	CTAGAGAAAT	AGATCTATGT	TTAGTGTTTT	TCCTGCGCTT
57101	AATTAATAA	ACTCTTTAGG	AATATGAAGT	AAATCATTAA	AGAGATAAAG
57151	CCCTTAAAGG	CAGGGAGTTT	AGAATTATTA	AATTCTAATA	ATTTAGATAC
57201	TGATTGGAGA	AGAGATGTAT	TCATAAGTTA	TTATTGTTAC	TATTTGTCTT
57251	TGTGTAATAT	TGTTTGATTA	AATGATGGCA	CCGACTTCAT	TAAGTTTAAA
57301	AACTCAGTAC	TAGTTAAATG	GGGCAACTTT	TCATAAAGCT	TTGCTAGTCC
57351	TTGAGCCCTT	TTATTTGTTA	AATGGCTCAA	CTGGAACCTA	AGCTGAGTTG
57401	TTACAAACTA	TTATTTGCTT	CAAGTTGTTT	TCTGTTCTCG	GCATGGCTTT
57451	TTCTTTTGTT	TACTGACAAA	TATAAATGTT	ATTCTGTTGA	GTTATGGTTA
57501	ACTATGAACA	CAGAACTGTT	AGGGATTAAAT	TTTCATATTT	CAGTTTGTG
57551	ATTAATTTCC	AGGTATTTGG	CAGCATAGAT	ATTAGAAAGG	AAAATATTTA
57601	AAAGAAAGTG	TAAAAATAAC	GAAGTGTATA	GAGCGAGGGG	TGGATAGCTA
57651	ATTAATAATTT	TGTCTGGTCC	TGCCTGTTCA	TATGAAAAAA	GGGGTTGGAC
57701	TTTCTTCTAA	GGGAATATAT	TAAATTGCTT	TCATCATATT	TTCTTATTTT
57751	CTGTCTGTCA	AGGAAAATAA	ATTGATACAT	ATATGGGGAG	AAAAGAGATC
57801	ATTTAGGGAA	GTGGCTCATG	GGACTTTTGG	TTTTGTTTGA	AGTGTATTAG
57851	GAAGTCGGGT	GTTTTTTTTT	TCACTTAAAT	TATTTAAAAC	CCAGAAAAGA
57901	AATGATATCT	TCTGGTTTTT	AAAGGAGACC	ATGAAGTTCT	GCATAGCTAT

FIGURE 3S



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58951 CATTGATGTG TAGTTCATAC TGCATTTTGA GAAGTGGAAA ATAGTTATTT  
58001 GGAGGAAGAT AACAAATCTG GAACCTTAGG TGCAAGGAGA AAAAGAATAG  
58051 ATGAAAGGGA AAGATGTTTG TAAATTATAA AAATTTCAAT TAGCTATTGG  
58101 TTTTCTGCAC TTTATATTTT AACTGCAGAA TTTTTCAAAA TCAGTTAATC  
58151 TTGGTGGAAT TAGCAGGATG TTAATAGGAG TGAAGTCAAG AAAAACATTT  
58201 TGTGACTGTC TAAGTTTGGG AAGTATTGGA TTAAATACAA TTGAGGTTTC  
58251 TTTACTATGG AACTCCTCAG AACTTATAAT ATGTTGATAT TCTTTGATTC  
58301 CCAGATGAGG GGATGGGTAA TAGGATACAT GGTTTTCCAG ACTTGTTTGA  
58351 AAATGCAACT ATTTTGGGT TGCAGGGAAG GATATAGTAG AACTCATGGG  
58401 AACTGGTGT TCTTGGAAAC TGCTTTGGAA ATGCTGGGT ATGCCCTGTT  
58451 AACTCTTACA TCATTAGTTT TTAGCCCAA AGGAAACAGC AAATAATGTT  
58501 TTATATGAGC CACATTTTGC GTTGATTTTC CTCCACTCT GTAAATTTAC  
58551 TAAAGCAGCA CTCTGACTTT ATTATGCTCA AATCGCTCT CTCCATTAAT  
58601 GTGTGTTTCT CCATCTTTTA GGGTTTTTAC TTTATAAATA CAGAGATTAC  
58651 TGTGTAATAA TCTAAATTTG CCACTGGGTC GTTATACATT TGTAACCTTC  
58701 CTCACAGTAT ATTTTGTGAT TTGGCAGAGT TTACCAATAT AGATGATACT  
58751 AACTGAAATT AATCATTTCT TATAATTGGA TAGAAAAGCA TGAGTAAGAA  
58801 TTCAATTGGT ATTATATTTA ATTAATTGCC AAGATTTTCA CATTTCCTGA  
58851 CTACAACAAT AAAATCAAAT GAATTGATGG CTTAAAAAAA AGAAATCTCA  
58901 AATGTTTAGT CAATGAAGAA CATCTATTGA ATGAGTGAAT GTTCATTATA  
58951 TATAGTGCAT TTTCTGAGCT TTTTGGAGG GGAAGTTGC TCCCATGCTC  
59001 TGAGAACTTT TAAGGATCGA TACATTATTT TTAACATAAT AATGAGAAAA  
59051 CATGAGCAGA GAACCCATTT CTGTCAATCC CATTCTCTAT CCTCCTGCTC  
59101 CCCCACCTCC CACCCAGCC ATCAAGCTAA GTAACATTT TACACCTGGA  
59151 CGTAGCTATA GGAACAGGCT ACTTTGAAAGT CTCCTAGTGA CATCCTTCAA  
59201 GTCTGAATGT TCAAAGGCAG TTTAACAGGG AGGTGACTT AATGAGATCA  
59251 TCAAGGAAAT GTCCAGTCAT CCTGAAGGGT ATTTTGGATG GGCTTCCAGA  
59301 ATTTAAAGAT TAAAGTTTTT TTAAGGTTTT TTTATTTTCA CTGTTTATAT  
59351 TGCCACATTA ATTTCCATTA TAAAACCAAGT AACCATAGTT TTGTTTAAAT  
59401 TAGCAATCTA ATTATTTTCA TGTATCCTCA TTATGAGAAT TTATGTCCAT  
59451 CACTTTGCTT GATGTGATA CAGTGACATG CTAAATGAGA AACAATTGTT  
59501 ATTTAGAAAA AAATGCACAA AGTGAAAGTC CTTTTAATCC CTAATCATAA  
59551 ATACATTTTA TTAGCTTACT TTAAGAAGTG GCAGTCACAG CTCCTGAACA  
59601 TTAGGGAGTG TTTCTTTTGG TCAGCATTAT TTATTTAGTG CACATTGCCT  
59651 TTAATTTTAA TTTGAAATTA TAGTAAATC CACGGGAGTT TTTAAGTCTC  
59701 CTCACAGCCT TTTGCTACCT TTTCACCAAG GTAGATCCAG ATGATAACTG  
59751 CTGTGTTGTG ACATCATAGA AATTAGAAAA ATATTTTCCT CTGAGGAAAG  
59801 AACATTTGTA ATGAACTCT ACATATCAGA GGTCTATAGC TATGTATCAA  
59851 TATTAAGTTT CTTTTGTACT TTGCTTTGTA GTCATCTTCA TTCCAACTT  
59901 TCATAATTAT TATTTTACT TTAAGAAAG AAATAACCCA CCAATATTGA  
59951 AGATTAGTAT TGTGTCACT TTGAAAGTCA GTAGAATTGA TGCAAAAGGA  
60001 ACCTGGAAC TTAATCAATT TTGTTTTTAT TTTCTAAAGT TCATGAGACT  
60051 CATTCTTATG GTTCATGTTT TTATTTTTC TCTCATCTT TATCATTATG  
60101 ATTGGAACT CTTTAAATT AATTTCTCAC ACAGTTATTA GCATAATAAT  
60151 CTGTTTCAG ATTGTCTTGG GGATCATCAC AAAGAAGAAC ATATTAGAGC  
60201 ATCTCGAGCA ACTAAAGCAG CACGTCGAAC CCTTGGTGAT TAGATATATC  
60251 AGATCTCCTC ATTAGACACC TTAGAAGTCA GGAAGCATGA AACTTGTGAA  
60301 CTGTTGAGT CTGTCTTCC CAGATATCTG CTGAACAAA ATATCCTACT  
60351 ATGCTGCCAA TTACATTTGT ATCTGATAAA ATGTGTCTGT AAGATAAATT  
60401 TAGATATGTG TAAAATCCCA TTTATAGAAA GTAAGCAAAA GTTAACATCT  
60451 CTCATCAAAT CATTCAATAC AATTTAGAAA CTGTAAACAG TTTGGTAGTG  
60501 GAATAAGTGA ATATTATTGG ACATTCTTAA AGTGAATATG GCAAACTGTG  
60551 CTACCTCAGT GGATACACCG GTCTCAGAAG ACACCTGACT GGTTAAAAAT  
60601 GTCTGACCCA TCCCGCAAG CCCTTTTTTT TTTTTTAAA TGTTTCCCGA  
60651 TCTTGTGGTA GTCTTATGGT AAATCTAAGC TCCTAAAGGA TTTTAAAGGA  
60701 GCTTAGCAAT TAGAAGTCT TACAGTTAAA TGGATTTTTT AATGGGCACA  
60751 CTAAGTAGAG TGTAATGTGT ATATTATTG TGATCATAGC ATTAGTTCTT  
60801 TTTCTGCTAT ACCCTGCATA TCTTCAAAGT CACAGTGTGT GTCCTGCCAT  
60851 CTCATTAGTG AATTGTACCT AGATTATGTG TGTGCCCTT TTGTATGATG  
60901 TTTCTGGAAC GCTATAAGCA GCTTTTAGAG TCAAATGCAT TCATTTTAAC  
60951 TGGCTTTATG TCCTAGTGGT TTCATGACTA CAAATTTGAA TTATCTTACT

FIGURE 3T



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61001	GCATAACATA	AAAAATGTCT	GGCTTTAGCA	ATTAATGCCC	GAAATTATTT
61051	TGCCCTGCAA	TTGTCATACC	TGTATGAAAC	CTGTCCCAGT	TTGCTTAAGT
61101	GCACAACTGA	TTATGTATTC	CTGTGTGTAT	GCTAATATTT	CACAAGTGTT
61151	TCATGCATCC	TTTTTTAAAA	AACTACTAAC	CAGAATATTA	TCGTAGCTAC
61201	TCATTCATTG	TGCTTTCTGC	TTACACCTATA	ATAATCTTTT	AGGACTGCCT
61251	TCTGATTTT	CACCTATCTT	TTAATGTAAG	CATTAACAAC	TAAGACTTTC
61301	ATAAAAGCAC	TGTATCTTAA	CTTTCCTGGC	CTAAATCAAA	AAAAGGAAAA
61351	CATTGATAAG	TGTCCTAGAA	ACTTGGATTG	TTTTATAGAT	TTGTTCTTGG
61401	GGCTCTGATG	TTTGGGATTG	ACGTTCTGTG	CTGACCATTT	TATATGCATT
61451	TTATCTTAAT	AGTATGTGCT	TTCATGAAGA	TTCTGATACA	AGTGGGCAAT
61501	CCTTAAATTA	TCTTTGAAAA	ATTGGTTAAT	TTTGGTTAAA	AAAGGGAAAG
61551	TGGCTGGGTG	CAGTGGCTCA	CGCCTGTAAT	CCCCAGCACT	TTGGGAGGCC
61601	GGGACGGGTG	GATCACAAGG	TCAGGAGTTG	AAGCCCATTG	TGGCCAACAT
61651	GGTGAAACCC	TGTCTCTACT	GAAAATAATT	GGGGCATGGT	GGCACATGCC
61701	TGTAATCCCA	GCTACTTGGG	AAGCTGAGGC	AGGAGAATTG	CTTGAACCGG
61751	GGACCCAGGA	GGCGGAGGTT	GCAGTGAGCT	GAGATCGCGC	CACTGCACTC
61801	CAGCCTGGGC	TACAGAGCGA	GACTCTGTCT	CAAAAAATAA	ATAAATAAAT
61851	AAATGAAAAA	GAGAAAAATAT	TGAGAGGATT	TGGTCATCAT	TTTACTGCTC
61901	TCTTCATGTG	ATGGAAATCA	ATTTTCCTTC	TCAAATGGGA	TCAGTATCAT
61951	TTCTAGTCA	TACATCCATC	CAGTTTTTGT	TACTTTTTTG	TTGGCATACA
62001	TTAATCAAAA	TAGCTCTGCT	TCATTGAGGC	ATGCAGTCCT	CAGACTCTCG
62051	GTGGAAAGGC	TGTCATACTA	TTAGTGACCA	TAGTAACTTT	TTATACCAAA
62101	GGATGGTTGC	TGGATAATTT	TAATATCTTT	ACCAATAAAG	TACTTTTTTG
62151	AAATACAAAA	TCAGGCTGCT	TGCTTTGCTC	TATTCTGTG	AACAAAAAGG
62201	ATTTAGCTAT	AGATTTAGCT	TCTCCTTTTA	TTTTCCCTTT	TATTTTCATAG
62251	GAGTCTTCTG	TTTATTCCCT	TCAGGCGCCT	CCTTGGCATT	ATAACAAAAA
62301	AAGATATCCT	CCGGCATATG	GCCCAGACGG	CAAACCAAGA	CCCCGCTTCA
62351	ATAATGTTCA	ACTGAATCTC	ACAGATGAGG	AGAGAGAAGA	AACGGAAGAG
62401	GAAGTTTATT	TGTTGAATAG	CACAACCTCT	TAACCTGAGG	GAGTCATCTA
62451	CTTTTTTTTC	CTCCTTTTACA	AAAAAAGAAA	GGAAATATAA	AAGCCGGGTT
62501	TTTGCAACAT	TAATGCTGGT	GGAATGGAGG	AGTTGTTTGG	
62551	GGAGGGAAAG	GAGAGAGAAG	GAAAGGAGTG	AGGTATTTC	CGTCTAACAG
62601	AAAGCAGCGT	ATCAACTCCT	ATTGTTCTGC	ACTGGATGCA	TTCAGCTGAG
62651	GATGTGCCCTG	ATAGTGCAGG	CTTGCGCCTC	AACAGAGATG	ACAGCAGAGT
62701	CCTCGAGCAC	CTGGCCTGTT	GCTCCAACAT	TGCAAAGACA	CATTATCAGT
62751	CCCTATTTCT	AGAGGGATTA	CTTTGAATTG	AGCCATCTAT	AAAAC TGCAA
62801	GGTCTTGCCC	TTTTTTTTTAA	TCAAACTGT	TCTGTTTAAT	TCATGAATTG
62851	TATAGTTAAG	CATTACCTTT	CTACATTCCA	GAAGAGCCTT	TATTTCTCTC
62901	TCTCTCTCTC	TCTCTCTCTC	TCTCTCTACT	GAGCTGTAAC	AAAGCCTCTT
62951	TAAATCGGTG	TATCCTTTTG	AAGCAGTCCT	TTCTCATATT	GAGATGTACT
63001	GTGATTTTAC	TGAGGTTTCA	TCACAAGAAG	GGAGTGTTTC	TTGTGCCATT
63051	AACCATGTAG	TTTGTACCAT	CACTAAATGC	TTGGAACAGT	ACACATGCAC
63101	CACAACAAAG	GCTCATCAAA	CAGGTAAAGT	CTCGAAGGAA	GCGAGAACGA
63151	AATCTCTCAT	TGTGTGCCGT	GTGGCTCAAA	ACCGAAACAA	ATGAAGCTTG
63201	GTTTTAAAGG	ATAAAGTTTT	CTTTTTTGTT	TTCTCTCAG	ACTTTATGGA
63251	TAATGTGACC	GGGTCTTATG	CAAATTTTCT	ATTTCTAAAA	CTACTACTAT
63301	GATATACAAG	TGCTGTTGAG	CATAATTAAA	TAAAATGCTG	CTGCTTTGAC
63351	AGTAAAGAGA	AGGAAGTATT	CTGATTAGCT	GTATCTGGTA	TTAATTGCAT
63401	GTTAAACAC	TGGAATTTT	AAAATTGAAA	TTAGATCAGT	CATTCTTTTC
63451	TTTTCTCAAG	ATATCTCATG	GCTGACACTG	AAGAAGAAAT	GTAATTCATA
63501	ACTTGCACTA	AATGTATATT	TTTTTTCTTA	AAAATTTACC	ATTCTTATTT
63551	ATATTTTAT	GGATTAAAT	TTATAAAATA	CAGATCAGTT	AATATTGCAC
63601	TTAAGTAATT	TTACCTTTTT	AATGTGATTT	TTATAGAATA	ATTCAGACTT
63651	ACAAATACAG	AGATATGAAC	AAAGTTTACA	GTGGGAACAA	AGGTTTAAAA
63701	AAAGGTTGTG	GTTCTCTCTC	TGTGATCCAG	TGTGCACATA	AACCTTTCTC
63751	TGATCTTTCA	CTGCCATCCT	CTGGATTATG	TCTTCTGACC	TGTCCATTTT
63801	GACCCATTAA	CTGGAAAGTT	GAAAACTAC	ATTAAC TGGA	AAGTTGAAAA
63851	ACTACATTAC	TTTGGAGAAT	AAAACCGAAA	GTTTCGTGTAT	ACCTTCTTAA
63901	AAAAAAAATC	AAACCAAAAA	TGTGAAAACA	ATAGAATTGC	AAAGATAGCA
63951	GTTAAATTT	TAATCTGAAA	ATAACCTTTG	AATCTCGGGC	TAGGTTATGT
64001	CCATATTTGA	AGTGGTCAGT	GATGGTTTGA	ACATTTTTTG	CAGGATGAGT

FIGURE 3U



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
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64051 TAAATGCAC TGGATTATAT TTGGGATTTT TGTTTTTGA ATTGTCTGTT
64101 TTAATCACAG CCTTAATTCA CAATTGGCAA AGGCAGTTA CTCAAAGGAC
64151 TGGGCTAAAT ATTCTGTAAT TATGCATTTT TGATAGGAAA ATGAAATTTT
64201 TGCAAACAGA CATTTTCTTT TTTTTTGGCT GGAGTGCAGT GGGGCATGGT
64251 CTTGGCTCAC TGCAGCGTTG ACCACCTGGG CTCAAGTGAT ACTCCCGCCT
64301 CAGCCACCCA AGTAGCTGCG ACTACGGGCA CACGCCACCA TGCCCAGCTA
64351 ATTTTTTTTGT ATTTTTAGTA GAGATGGGGT TTTGCCATGC TGCCCAGGCT
64401 GGTCTCAACT CCTCAGCTCA AGCAATCTGC CTGCGTGAGC CTCCCAGGCT
64451 GGTGGAATTA CAGGCGTGGG CCACTGCGCC TGGCCCAGAC AGACATTTTC
64501 TGAAACACAA CTGGCAATGA GCTGTTTTTA CATTTTGAAA GTGATTCCTC
64551 ACTTCCTAGT TCTTAATTAT AGTATACCTA TTAAGATCTG TAAGATCCTG
64601 AAGACATAAG ATCATGAAGC CATATAAGAA TGAGGATGA AAGTTGAGCA
64651 AAATTTTCGG GATTTTGGGA AACATTCTTA GCTGTGCTAT CTGCCTAAAA
64701 TTATTCCTTA TTAATTCTCT CCTTTGACAG ACTTCAAGTT TTCTTCATAG
64751 CCCTTTCAAA GTTTTTTGAG CCATCCAGAG TAAAATCATT TCTAAATGAT
64801 AGTTCTGTAT ATCTCCAACT CGTCTTAAGT GTATTTGCCT GTGTGCAACG
64851 TATTGCTAGA CTATGAATC CTCAGCATGG CTGCTGGATA ACTTAATTGT
64901 CCTGAGTTAA TAGCCTTCAA AGGACAAATC GGTTTCTTTG CAGATAGCTT
64951 CGTAAACTT CACATGGAGT TTATTTTATC ATATTTCCCT TTTTATTTC
65001 TGCTCCTCCT TTAATTGCCC ATCTTGCTTC AGAGACTGAC ATTTTCAGGGT
65051 GGATATTAAT TAAAGCATT AATTTGTTTT TTGGTATATT TCTATCCCTA
65101 GTATTTCTAT CTTACTGCTA AAATACAGGA AAAGTGCCGT ATTTTAAATG
65151 CATTTAGTGG TTTTCTTTGG TGTTATCTGT TCCATTTTTC TTTTTCATAC
65201 ATTGAAGTGT GTCTCCTTT CAACCAAAAT AATGAAATAG TGGAGACCAT
65251 GAAATTGTTG TGCCTGGCTA ATTGGCAAAT TAATTTACCA ATATAATAAG
65301 TGTAGCGCCT TGTTTGAATA CCCTTTTGA GAAGGTATGA TGAGAAATGGG
65351 CAAGGGTGT (SEQ ID NO:3)
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**FEATURES:**

Start: 2159  
Exon: 2159-2237  
Intron: 2238-22041  
Exon: 22042-22199  
Intron: 22200-30359  
Exon: 30360-30459  
Intron: 30460-31475  
Exon: 31476-31663  
Intron: 31664-32964  
Exon: 32965-33087  
Intron: 33088-34548  
Exon: 34549-34755  
Intron: 34756-37975  
Exon: 37976-38056  
Intron: 38057-39552  
Exon: 39553-40098  
Intron: 40099-46366  
Exon: 46367-46553  
Intron: 46554-49237  
Exon: 49238-49636  
Intron: 49637-55445  
Exon: 55446-55662  
Intron: 55663-62274  
Exon: 62275-62362  
Stop: 62363

**CHROMOSOME MAP POSITION:**  
Chromosome 4

FIGURE 3V



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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SYNTHETIC VARIANTS (SNPs):

DNA

Position	Major	Minor	Domain
1275	T	C	Beyond ORF (5')
1456	T	C	Beyond ORF (5')
5893	G	A	Intron
6226	A	G	Intron
8866	T	G	Intron
10397	C	T	Intron
10621	T	-	Intron
19651	A	G T	Intron
19891	T	-	Intron
20272	C	A	Intron
20412	T	A	Intron
23340	A	G	Intron
29948	T	A	Intron
33579	A	C	Intron
40762	G	A	Intron
40936	T	C	Intron
45998	A	G	Intron
47771	T	C	Intron
48117	C	T	Intron
54563	T	G	Intron
58735	C	T	Intron
59643	C	A	Intron
61638	G	T	Intron
63291	G	C	Beyond ORF (3')
63463	A	G	Beyond ORF (3')
63636	G	A	Beyond ORF (3')
63998	T	C	Beyond ORF (3')

Context:

DNA

Position

1275 GCATTTTCAGGAGGAGAATCTCCAGTCTAGAGGAATCCTCTCAGAGGTAGCTATAAAATA  
TTGAACTCTGATCTTCAATAAGCATTGTGCGGTTTTGTGTTTTGTTTTTAATGACAGTTT  
TAAACAAGAAAGTTGCTTTATTTCTGAACCTTCATAAAAATTTCTATTAAAGAGACAATTT  
CTGAATTTTATAACAATTTCTAGAACAGTTGAGTACCTCACTTTGAGACACATTTTTGCT  
AAAAGTTAAAAACACAAAACCTTATGAGATAAAATAGGAAGCTAGTAGAGATAGGAAAG  
[T,C]  
CCTCTGCTTAGTAAACCTCTTTTTTTCGCTAGTTTAGACACATACAATAGTAAAGTTACTT  
AGTACGTTGATAGTTTCTTTCTCCTCAAAAGCTACAATGTCTTACTAGCTAGTTCCTTC  
AAGAAAGGAAACAAGAAGCCGCTGGAGGAGATTGGTGAGTGGGATAAAACACTATTCAAC  
TCTTCAGTTATTTCGTTTTTAAATCCTCAATGAAAGGCTGCTGTATTATAGAGTATTTTT  
TTTTTATTTTTAATAGACTTAGAACCAAGTTTCTTGAGAAACCTTTGGCATATTGTAGTT  
(SEQ ID NO:46)

1456 TGAATTTTATAACAATTTCTAGAACAGTTGAGTACCTCACTTTGAGACACATTTTTGCTA  
AAAGTTAAAAACACAAAACCTTATGAGATAAAATAGGAAGCTAGTAGAGATAGGAAAGT  
CCTCTGCTTAGTAAACCTCTTTTTTTCGCTAGTTTAGACACATACAATAGTAAAGTTACTT  
AGTACGTTGATAGTTTCTTTCTCCTCAAAAGCTACAATGTCTTACTAGCTAGTTCCTTC  
AAGAAAGGAAACAAGAAGCCGCTGGAGGAGATTGGTGAGTGGGATAAAACACTATTCAAC  
[T,C]  
CTTCAGTTATTTCGTTTTTAAATCCTCAATGAAAGGCTGCTGTATTATAGAGTATTTTTT  
TTTTATTTTTAATAGACTTAGAACCAAGTTTCTTGAGAAACCTTTGGCATATTGTAGTTT  
TTTTATGGCTATGACTCACATGACATTACTGTATAAACTAGTACATTCTCTCGTAAAC  
CACACAACTTACTAGAGTGCTGCTCTCATTTTTTCTACATTAGAAATGAAAAAGGCATT  
GTCTGCATTCAAAATTTCTTTTTTACATCTCTGTATTACTTTTTCCCTTTATATTTATC  
(SEQ ID NO:47)

FIGURE 3W



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TCTAGTTGACAAGACTGAGGTAAGGAATTGTTAAGGAAAAGTCAGAATTCATCCAGATA  
TTTGGGCTCATACTTTAATCATGAGGCTAAACTGCTTCTCTACACGTATCTTCATAGTA  
ACTTGTTGTTTTAAGTCTGGTAGAAGCATAAGAAGTTTAAACACAGACAGAATCCTGTGGA  
AGTTAGTAAATTTCTAGTGAACGATAGAAATGATAGAAATCTCTTCTCCCCCAAAGTCC  
CAAGAACAGATTAGTCTGCTTTTGACAAGTGTTATCAAAGTAGACTGTTCTCACATACAC  
[G,A]  
GGGGACTCAATAGGGCATTCTGGTGGATATAATAAAATGAGTAAATGCGATAACAGGAG  
GAAATGCCTAGTGTGTGCTCTTGGATTAGTTTTGATACAACAAAGGCAGCTTTGTTGTG  
AGTCAGTAGAGAGGGTAGTGTAGAAAGGTGGAAGTTGGAAGAGTGGCAGATCCTAGAGGA  
CTAATGATGGGCTTAAACCACAAAAAGTGTGCGTTTGCCATTGAA  
(SEQ ID NO:48)

6226 ATAAAAATGAGTAAATGCGATAACAGGAGGAAATGCCTAGTGTGTTGCTCTTGGATTAGTT  
TTGATACAACAAAGGCAGCTTTGTTGTGAGTCAGTAGAGAGGGTAGTGTAGAAAGGTGGA  
AGTTGGAAGAGTGGCAGATCCTAGAGGACTAATGATGGGCTTAAACCACAAAAAGTGTG  
CTTTGCCATTGAAATAAAAGTTTGGGGCTTATTTTTTCAATTTTCTCCCTGAAATTATT  
TCTTGACATTCAATAGCTCAGCAGTGTATCTAAATAAAGCTTTTTTGGGTTTCTATTATA  
[A,G]  
TAGAGGTTTGTTCCCTTTTCTTCCCTTTGAAAAGTATCATTTTTTGCACATTATTTGAAA  
ATCCAGGTGTTATATGATATTCTTATTGCCAGAGGGACATTCTGCAGGCTCTTTGTA  
TGATTTTAGGATTGATACCTTATTATATTTTTTATTTGGCCCTAATATTTTATCCA  
AAATTTAAACCTCTCTTAAATAATCCATCTAAGTGTCTGTAAATTAAGGAACAA  
TAAAGATTCTTTATTTGGTGTGAGAACTCCTTGTCTTACAACAGTAGTATAAAACAA  
(SEQ ID NO:49)

8866 ACATGTAAACCAACAATGAAATTATTTTAGTGACTTGAGAATCAAAGTGCTAGAGTTTGA  
ATCCCTGTTCTACTACTTGCTAGCGGTGTGACCTTGGGCCTGTTTAACTCTTGACACCTT  
GTTTTCCAAATTTATAAAGTGGAGATAATAATATCTGTCACATTGTGTGTTGTGAGGAT  
TATATGAACATAATATATGTAATGTCTGAGAACAATGTCTGGTACACATTAAGTTAATTA  
AAATTAGCTGTTCTTACTGTTATTATTAGACATGAGCTAGATAACAGTGGCCTCTACATG  
[T,G]  
GAAAGATTATTTTAAATCTGATGTAGTTCAGTTTATCTATTTTTTTTATTTTTGTCCCTT  
TTGCATTGATGTCTATCTAATAAACCTGCCTAACTCAGGATCACAAAAATTTACTCCTG  
TATTTTATAATTTTAGCTCTTTAGATCTAGGATCCATTTTCTAGCTAATTTTATATATGG  
TGTGAGGTAGGGGTACGGTTTCATTCTTTGACGTGAATAGCCAGTTGTCCAGCATCA  
TTTATTTCAAAGACTATTCTTTTCCCTCACTAGAAAAATATTTCTTTAAAGAATAATGAAT  
(SEQ ID NO:50)

10397 CCAGGCTCCCTTGAACTCCTGGGCTCAGATGATATAGCCTCCTGCCACAGCGTCTGATT  
AGCTGGGACTACAGGTGTGCACCACTACACGTGGCTTTCCTGATGAAATTTTAAATACCC  
AAATATTTGAGCAGAAATAATAGCTTGTGTTTATTGTTTTTCTACTATCTGTCAAGTATA  
GTATTAAATGTTTTACATAATTTGTCTCCAGTCCACATACAACTCTAGTAGAAGTGGG  
TAACAAAAACCAAGGTACTCAAAGAGGTTAATAAGTAAGTCTGCGCTGGATCACAGAACTAA  
[C,T]  
GGGAGGCAGGGCTGGAATTTGACTCTAGGTCTTTCTGACCTCAAAGTGCAGTAAAGTCAT  
GGAATTTCTCTACTAGGCCACCTGGAAGAAAAGTGATCTTTTTTCCAGTCTTTTTTGT  
CTGTTTTTTCAGCCAGGAGATAGTAGAGTTAGGTAGTAGAATAGTAGTCACTGGCATCCGG  
TAGTCAGCCCTCCAAAAAGTTTTTGATTTTTTTTTTTTTTTTGTCTTAACTTGAAG  
CTACTAACTTTTCAGTCTACTTTCTTATCATCCAAGAGCTGGATATTAGGTAGCAGAA  
(SEQ ID NO:51)

10621 CTCTAGTAGAAGTGGGTAACAAAACCAAGGTACTCAAAGAGGTTAATAAGTAAGTTCGCGC  
TGGATCACAGAACTAACGGGAGGCAGGGCTGGAATTTGACTCTAGGTCTTTCTGACCTCA  
AAGTGCAGTAAAGTCATGGAATTTCTCTACTAGGCCACCTGGAAGAAAAGTGATCTTTTT  
TCCAGTCTTTTTTGTACTGTTTTTTCAGCCAGGAGATAGTAGAGTTAGGTAGTAGAATAG  
TAGTCACTGGCATCCGGTAGTCAGCCCTCCAAAAAGTTTTTGATTTTTTTTTTTTTTTTT  
[T,-]  
GTCTTAACTTGAAGCTACTAATTTTCAAGTCTACTTTCTTATCATCCAAGAGCTGGA  
TATTTAGGTAGCAGAACTATGGAATTATCCTAAGTCTCTTGAAGCTTCAGCTGTTAAA  
ATTAATTGGTTCTGATTAACTGTGCTCAAGATTTACATTTCTAGGAGCCACAGTTTGA  
TTGGTCTAACTTGGATCTATGTGTTTTCTTTAGCTGGGGAGGAGAAGGTATCTTGATTGA

FIGURE 3X



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19651

TACCTTCACCAGGACTGCATGCAGTGAGGGACAGAAGTTTCCTTAAATAATTGGGTCT  
(SEQ ID NO:52)

TTTATTTTCTGCTACTATGGCAGAATTGAGTTGTTGCAACTGTGTGGCATCCAAAGCCTA  
AAATATTTACTCTCCTGGCTCTTTGCCAACCCGTTTAGATTATGAGCACTTTGGCATT  
TTATGTTTTTGTCTTTCTATAGCACACAGTAAGATGTTCTGCCCACATTGTGCATAA  
TTTATGGGTTTATTCAAGGATTTATGCAAGTGTAGCTGCAAGAAAAAACCTAGAAGTGA  
ACTTGCTAGGTTGAAGAGCA

[A,G,T]

CTGTGTATGTTAAATTTTGTAGCTTTGCGCTTCCCAAAGGGATTATTCCATTTCTACT  
TAACTACTAATTTGTGATAGGACTTCTTTCTCCATAGCTTTGCTAAATTAATGCATT  
ACACACTTCATCTTTACTAATCTGATAGAGGAAATGATATTGTGATTGATTTGCATT  
TCTTTTATGTGTAGCTTGAGCTTATTTTCATATTAAAAGCCAATTGTATTCTTTTT  
CTTGAGCTATCTTTAATGT  
(SEQ ID NO:53)

19891

TTTATGCAAGTGTAGCTGCAAGAAAAAACCTAGAAGTGAACCTGCTAGGTTGAAGAGCA  
TCTGTGTATGTTAAATTTTGTAGCTTTGCGCTTCCCAAAGGGATTATTCCATTTCTATC  
TTAACTACTAATTTGTGATAGGACTTCTTTCTCCATAGCTTTGCTAAATTAATGCATT  
CACACACTTCATCTTTACTAATCTGATAGAGGAAATGATATTGTGATTGATTTGCAT  
TTCTTTTATGTGTAGCTTGAGCTTATTTTCATATTAAAAGCCAATTGTATTCTTTTT  
[T,-]

CTTGAGCTATCTTTAATGTCTTCTGATACATTTCTGAAGTCTGTGATACTCATATAA  
GATATATGGTGAACATGTGTCAAAGATTTATTTGACTCTAATGAGGGAACCCGCTGATG  
ACAAGGCTGATTGAGAAGAGGATGTGTGAGATGAAGTGTATATCATCAGTGAAAGAAAGC  
AAATTCTTACAGGGCAAAAACAAAACCACTCTAAGGGTTATTGTTTCTACTGGACAG  
AATTCATTTGCATTTTACCAGATAAAAATTACTATTTCAATTTATCTTTACAAATCAT  
(SEQ ID NO:54)

20272

CAAAGATTTATTTGACTCTAATGAGGGAACCCGCTGATGACAAGGCTGATTGAGAAGAG  
GATGTGTGAGATGAAGTGTATATCATCAGTGAAAGAAAGCAAATTTTACAGGGCAAAAA  
CAAAACCACAACCTAAGGGTTATTGTTTCTACTGGACAGAATTCATTTGCATTTTACCA  
GATAAAATTAATCTATTTTCAATTTATCTTTTACAAATCATTTTCTAATTTTACAGAGTCT  
ATTCCCTAATCAGTAGTAAATAGTCTTCAAATTTCTCCGAGCGTCAGGTGACTATTATG  
[C,A]

AGGCTAATTGTTGACACTCGGGCTTGACTTTAAGAGAACATGCCATAATCTTTTGGCCTT  
ACTTCCAAGTTTGGATAATTTTCTTAACACATTTTCTCTAATTGCAATGATTTCAAG  
TGATATTATTTCTTTTTTTTAAATTTTCTTACTATTATTGATCACTCTTGGGTGTTTCT  
CGGAGAGGGGGATTGTCAGGGTCATAGGACAATAGTGGAGGGAAGGTCAGCAGATAAAC  
ATGTGAACAAAGGTCTCTGTTTTCTTAGGCAGAGGACCCTGCGGCCTTCCACAGTGTTT  
(SEQ ID NO:55)

20412

TTATTGTTTCTACTGGACAGAATTCATTTGCATTTTACCAGATAAAAAATTACTATTTTCA  
ATTTATCTTTTACAAATCATTTTCTAATTTTACAGAGTCTATTCCCTAATCAGTAGTAAA  
TAGTCTTCAAATTTCTCCGAGCGTCAGGTGACTATTATGCAGGCTAATTGTTGACACTC  
GGGCTTGACTTTAAGAGAACATGCCATAATCTTTTGGCCTTACTTCCAAGTTTGGATAA  
TTTTTCTTAACACATTTTCTCTAATTGCAATGATTTCAAGTGATATTATTCTTTTTTTT  
[T,A]

AAATTTTTTACTATTTATTGATCACTCTTGGGTGTTTCTCGGAGAGGGGGATTGGCAG  
GGTCATAGGACAATAGTGGAGGGAAGGTCAGCAGATAAACATGTGAACAAAGGTCTCTGG  
TTTTCTTAGGCAGAGGACCCTGCGGCCTTCCACAGTGTGTTGTGTCCTGGGTACTTGAGA  
TTAGGGAGTGGTGATGACTCTTAATGAGCATGCTGCCTTCAAGCATCTGTTTAACAAAGC  
ACATCTTGACCCGCCCTTAATCCCTTTAACCCTGAGTTGACATAGCACATGTTTCAGAGA  
(SEQ ID NO:56)

23340

TTTTTTTTTTGGAGGTGCGGGGACTGTGCGCCATTCTGTTGCCCAAACCTGGAGTGCACTG  
GTGCAATCTTGGCTCACTGCAACCTCTGCCTCCAGGTTCAAGCGATTCTTGTACTCAGC  
CTCCTGAGTAGCTGAATTATAGGTGTGTGCCATCATGCCAAGCTAATTTTTGTATTTTT  
AGTAGAGATGAAGTTTTCGCATGTTGGCGAGGCTAGTCTCAGACTCCTGGCCTCAAGTGA  
TTGGCTGACCTCAGCCTCCCAAAGTAGAAAATCTTCTTGAAAAATAAAATTCCAAATCTC  
[A,G]

FIGURE 3Y



Attorney Docket No. CL001163  
Application Serial No. 09/804,472  
Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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AAAGGCCCTATATAATTTTGGTGTGGAAATTTACTTGTCAATGAAAATGACTATTTACA  
CAAATTATAAGCTTCCATATTAATATATATGTGTGTGAACCTGAAATTCAAATTTTATTA  
TATTGTTTATGAAAGGTACAGCCTCTGAGATTCTCAGATGGTATTTACCTTTAGGGCAT  
ATCTAAAAATAAAATACAGTACATGAAATCCAGTGCTTTAATCCAGTGATTCTTAACTT  
TTTGCTCTCAGATCCCCTTTAACTCTTAAAGATATTGAAGAGCTCCAAGGAGGCTTG  
(SEQ ID NO:57)

29948 GACTCTACCAATGGGATCGGAGCTCTCCAAACCTGCATATTAAAGGCCTATAAGTTTGT  
GGGGTCCCTTTGTCCACATGATTATTTCTGTAATACATTGTATTTATGGACATGGTATTA  
TTATACACAGATCCTGTCTTTTAAAGAACATTATAATCCACTTAACTGCTAGGACCAGAG  
AATGACCGATAAATCAAACCATATTGTCTTACAGAAGACATATATAAAAGATGGTTATGT  
GTACCAATTGAGGTTCAAATTTGATTCAATTTAAACAATCTAGGCCAGATTTTATATAG  
[T,A]  
TTGTGGACCTTTGCACTCAAATCTCAAGGTTCTTATTAATGCAGATCTTGGCTGGGC  
ACGGTGGCTCACACCTGTAATCCCAGCACTTTGGGAGCCCAAGGCAGGTAGATCATTGTA  
GCTCAGAAGTTCAAGACCAGTCTGGCCAACATAGCGAGGCCAGTCTCATTGAAAGAAAA  
AAAATTTTAAATAAAAAATAAAGCAGATCTTGGGTAAAGACATGTAGTCTGGTTTACA  
GGTATTAACAACCTGTCTGTAATGTAGTGATTTTGCTCCAGACTTACCTTTTCCATTATTT  
(SEQ ID NO:58)

33579 TTACTGTGAAGGCTGATTTTTTTTTTCTCTCACCCTAATTTAACACATGACTAGGCAAA  
TTTTAGACTATTTAGTTAAACATCAAGAGCCTGGAAGAAGTATCTTGTGACCTAATGTT  
CTTTGACGGGTAGTTGTTACTTTGCTGTTATGACCTGAATTTTTTTTTTTGAGACTG  
AGTCTTGTGCTGTGCGCCAGACTGGAGTGCAGTGGCGCAATCTCAGCTCACTGCAACCTC  
TGCGTCCCAGGCTCAAGCAATTCCTGTGTCTCAGCCTCCTGAGGAGTTGCGATTGCAGGC  
[A,C]  
CCTGTACCATGCCCTGCTAATTTTTGCAATTTTTTTGTTTGTTTTTTTTTTTAGTAGAG  
ATGGGGTTTACCATGTTGGCCAGGCTGGTCTCAAACCTCAAGTGATCACCCG  
CCTCAGCCTCCCAAAGTGTGGGATTACAGGTGTGAGCCACCACAGTGGCTATGACCT  
GATTTTGATTCACTTTTATAATTACCTTTTGATTAGATAAGTTAATTATCTTGA  
ATTTGGCCATTTTATGCTTTGAGAAAGTAGTTAATCACAGTGGGTCAACAGTACAACTT  
(SEQ ID NO:59)

40762 ATCCATCACCTCAAGCATTTATCCCTTGTGTTACAAACAATCCAATTACACTCTTAATTA  
TTTTAAGTGATCAATTAATTTATGAATATAGTTCAAAGACTTCTTCATTCATGACTAG  
CACCTAGGCTAAAAAATTAGACACCTGGGCTCCTGGGATCAATCACGCATACTGTGTC  
TCTTGTGCTCACTCCC  
[G,A]  
CTGTCTCTCTCTTTCTCTCGCTTCCTTTTTCTCTCTCTCTGTGGTTTTCTAGGGTGG  
TGGCCTCAGGGAATTGGATTTCTTATATTATAGCTCAGGATCCCAAGAGGGCTGTTTTT  
AATGTAGCCAAAGAAGTCTTGACGCTGACTTGTTTTATTCTATTCTATTGAGGTAGTCAC  
AGAGCCCCGACCACAT  
(SEQ ID NO:60)

40936 TACAATTAAATTATTGAATATAGTTCAAAGACTTCTTCATTCATGACTAGCACCTAGGCT  
AAAAAATTAGACACCTGGGCTCCTGGGATCAATCACGCATACTGTGTCTCTGTGCTC  
ACTCCCGCTGTCTCTCTCTCTCTCTCGCTTCCTTTTTCTCTCTCTGTGGTTTTCT  
AGGGTGGTGGCCTCAGGGAATTGGATTTCTTATATTATAGCTCAGGATTCCCAAGAGGGC  
TGTTTTTAATGTAGCCAAAGAAGTCTTGACGCTGACTTGTTTTATTCTATTCTATTGAGG  
[T,C]  
AGTCACAGAGGCCCGACCACATTAGAGGAGGGACATACACTTGCTGGGACAAGTGTAA  
AGAATTCATGATCATGTTTTAAACCACTTTTATTAGTTTCTATTGCTGCTGTAATAAA  
TTACCACAACCTAATGGCTTAAAGCCACACAAATTAATATCTTACAGTTCTGCAAATC  
AAAAGTCTGAAACGATCTCACTGTGCTAAAATTAAGGTGTTTCGTAGGGCATTCTGGAGG  
CTGTAGGAGAGTCTTGTTTTTTGCCTTTTCTGGCTATTAAAGCTGCCAGCATTCCTT  
(SEQ ID NO:61)

45998 TGTATATCAGTCAAAATATTGGGCAACTCTGATAAGTTGTCCACTTAACATTGTACCAC  
TTAAGATGAATAGCATCTACCATTTCCGTCATTTGTAAATATATAGGAGGACATAATCAC  
ATAATCTTGAAGTAAAGACAGTGCTTAAACTGAATCAGTTAAGTTTTATGAAAAATAC  
TTCATATTGTACTTTTAAAAATATATATTTTTTAAATTTCAATAGCTTTTGGGTTACAAGT

FIGURE 3Z



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GGTTTTGGTTACGTGGATGAATCTATAATGGTGAAGTCTAAGATTTTACTGCAACTGTC  
[A, G]  
CCCAAGTAGTATATATTGTATCCAGCATATTGTCCTTTTTTTTTTCTTTTTTTTTTTTCA  
TTTCACCATGGACTAATGAAAATTTTGTAGGGACTGACATTAGGGCACCTTGAGCTAC  
CTTGAGCTAAAGGAAATAACCCCTTGAATTTTTTCTGTTGGCCTAGAGAATGTGGTTG  
TTTTGTAAGTGAATTCATGGGATTGTTAAGGTACAAGATTTTGCTTTAGTTTTATTGTGA  
CTAGGATTTTGCTATATTAATACAATGTGAAAAGAATCAAAAGTGTAGAAATAAATGCA  
(SEQ ID NO:62)

47771 GAAGAGTAGAACATGAGGCTTTATTTAAAGATTAGCAGAATTTAAGGAAAAGGTGACTT  
TGTTGAAGATTATAATGTGAAGACAAAGGAACGAGGATGGGAATAAATTTGTATTTCATG  
AGGCTTTGAAGAAATGACTCTAGAGAGTATATTTGGGTACTTTTGGGAAATGAAGTTG  
GATTAGTGAGAAGGAACAGATTATGAAAAGACAAGAAACCTGATTAATGTCAGGATGATT  
TTATATTTGAAG  
[T, C]  
TGGTGAGATTTATGGCAGTCCTGGCTTTGCCATTTTGTAGTTTGATGACTTTGAGAAAAGTT  
CCTTCTTGAAGTTTAAATTTTCTGTATATAAAAAGTAATAACACCTGGTGATCTGCTAGG  
TTTGTTTTGGGATTATATGAGATAAAATGCATGCAAACTGTTATAATAGTGCCTGGTA  
AAATAAGTGCCTAGTTTAAAAACAAGTCTTTGTAACTGCTTAGGACATGCCTGGTATA  
GGGTAGGTATGT  
(SEQ ID NO:63)

48117 GACTTTGAGAAAGTTCCTTCTTGAAGTTTAAATTTTCTGTATATAAAAAGTAATAACACC  
TGGTGATCTGCTAGGTTTGTTTTGGAGATTATATGAGATAAAATGCATGCAAACTGTTA  
TAATAGTGCCTGGTAAAATAAGTGCCTAGTTTAAAAACAAGTCTTTGTAACTGCTTAG  
GACATGCCTGGTATAGGGTAGGTATGTAATACATAGTAGGTAGGATCTGTCTCCTTGCTA  
TTTTTAGGTAAAAAAACAAAAGGAAGAGCTTCAGCTTAATACAGTATGAACTGACGAGCC  
[C, T]  
TGGTAGGTTTTTGTAGCAAAAGAGCAACACAGTAAAAGTAGTACTTAGGAAAGATTAAACA  
GGGAACATGGCTTATACAGTGGTAATGGGGCTGGAGTCAAGGAGGTAAAGATAAAATGGT  
ATTATAAATTAAAGGAATAGCCAGGCAGGATGGCACATGCATGTAATGCCAGCTACTGGAGA  
GGCTGAGGTGGGAGGATCATGGGAGTCCAGGAGTTTGAGACCAGCCTGGGCAACTGAGTG  
AGACCCCAATCCTAAAAAATACAAAGTAAAAAAGGAATAAAGTCATGAGGGCTTGGACT  
(SEQ ID NO:64)

54563 GCTTTGTCACCCAGGCTGGAGTGTGGTGGTATGATCATGGCTGACTGCAGCCCTGACCTT  
CCGGGCTCAAGTGATCTTTCCACCTCAGCCTCCCAATTACTTGGGACCACCAGCATGCTT  
GGCGATTTTTTTTTTTTTTTTTTTTGTAGAAGCAAGTTTCCCTATGTTTGCCAAGGC  
TGGTCTTGAACCTTAGGGCTCATGTGATACTCCTGCCTCGGCCTCCCAAAGTGTTAGGAT  
TACAAGCCTGAGCCACCATGGCCGGCCAAAATATTTTCACTATAACAAATATCATATCTG  
[T, G]  
ATATACTCAGTTTAAATACTAACTCAAAGTAGAAACATAAAGCTGAATGACTATTTTATT  
TTCAGATTCTCTCCATTGAGTTTCCTTCTCCGTCTGTGTGATCTCTGAACTTTTCTCCA  
TCTTTGCCACTTCTGTCTAGCATTTTTTTTTTATCAGCAGTTTCATTGAGTTTTTTTT  
TTAGTTCTTTCAACGGTGGAGTGAAGTAGGCAGCAGGACAGAAGAACTTGAAGCAGAGC  
ACACTGGAGAGGAGAAATTAACAAAGCCTTTATGAATAAAACAACCCCCCAATATCAGTC  
(SEQ ID NO:65)

58735 TGGGTTATGCCCTGTAACTCTTACATCATTAGTTTTTAGCCCAAAAGGAAACAGCAAAT  
AATGTTTTATATGAGCCACATTTTGCCTGATTTTCCCTTCCACTCTGTAAAATTAATAA  
GCAGACTCTGACTTTATTATGCTCAAATCGCTCTTCTCCATTAAATGTGTGTTTCTCCAT  
CTTTTAGGGTTTTTACTTTTATAAATACAGAGATTACTGTGTAAAATTTCTAAATTTGCCAC  
TGGGTGCTTATACATTTGTAACCTTCTCACAGTATATTTTGTGATTTGGCAGAGTTTAC  
[C, T]  
AATATAGATGATACTAACTGAAATTAATCATTCTGTATAATTGGATAGAAAAGCATGAGT  
AAGAATTCAATTGGTATTATATTTAATTAATTGCCAAGATTTTCACATTTCTGACTACA  
ACAATAAAATCAAATGAATTGATGGCTTAAAAAAGAAATCTCAAATGTTTAGTCAATG  
AAGAACATCTATTGAATGAGTGAATGTTTATTATATAGTGCAATTTCTGAGCTTTTTT  
GGAGGGGAAGTTGCTCCCATGCTCTGAGAACTTTAAGGATCGATACATTATTTTAAAC  
(SEQ ID NO:66)

FIGURE 3AA



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GTTTATATTGCCACATTAATTTCCATTATAAAACCAGTAACCATAGTTTGTGTTTAAATTA  
GCAATCTAATTATTTTCATGTATCCTCATTATGAGAATTTATGTCCATCACTTTGCTTGA  
TGTGATAACAGTGACATGCTAAATGAGAAACAATTGTTATTTAGAAAAAATGCACAAAG  
TGAAAGTCCTTTTAAATCCCTAATCATAAATACATTTTATTAGCTTACTTTAAGAAGTGGC  
AGTCACAGCTCCTGAACATTAGGGAGTGTTCCTTTTGGTCAGCATTATTTATTAGTGCA  
[C, A]  
ATTGCCTTTAATTTTAAATTTGAAATTATAGTAAATCCACGGGAGTTTTTAAGTCTCCTC  
ACAGCCTTTTGTACCTTTTACCAAGGTAGATCCAGATGATAACTGCTGTGTTGTGACA  
TCATAGAAATTAGAAAAATATTTTCTCTGAGGAAAGAACATTGTAATGAACTCTACA  
TATCAGAGGTCTATAGCTATGTATCAATATTAAGTTTCTTTTGTACTTTGCTTTGTAGTC  
ATCTTCATTCCAACTTTCATAATTATATTTTACTTTAAAAAGAAAAATAACCCACCA  
(SEQ ID NO:67)

61638 AAAAAAGGAAAACATTGATAAGTGTCTAGAACTTGGATTCTTTTATAGATTTGTTCT  
TGGGGCTCTGATGTTTGGGATTGACGTTCTGTGCTGACCATTTTATATGCATTTTATCTT  
AATAGTATGTGCTTTCATGAAGATTCTGATACAAGTGGGCAATCCTTAAATTATCTTTGA  
AAAAATTGGTTAATTTTGGTTAAAAAAGGGAAAGTGGCTGGGTGCAGTGGCTCACGCCTGT  
AATCCCCAGCACTTTGGGAGGCCGGGACGGGTGGATCACAAGGTCAGGAGTTGAAGCCCA  
[G, T]  
TCTGGCCAACATGGTGAAACCTGTCTCTACTGAAAATAATTGGGGCATGGTGGCACATG  
CCTGTAATCCAGCTACTTGGGAAGCTGAGGCAGGAGAATTGCTTGAACCGGGGACCCAG  
GAGGCGGAGGTTGCAGTGAGCTGAGATCGCGCCACTGCACTCCAGCCTGGGCTACAGAGC  
GAGACTCTGTCTCAAAAAATAAATAAATAAATAAATAAAGAGAAAAATATTGAGAGGA  
TTTGGTCATCATTTTACTGCTCTCTTCATGTGATGGAAATCAATTTTCTTCTCAATGG  
(SEQ ID NO:68)

63291 GAGATGTACTGTGATTTTACTGAGGTTTCATCACAAGAAGGGAGTGTTTCTGTGCCATT  
AACCATGTAGTTTGTACCATCACTAAATGCTTGGAACAGTACACATGCACCACAACAAAG  
GCTCATCAACAGGTAAAGTCTCGAAGGAAGCGAGAACGAAATCTCTCATTGTGTGCGGT  
GTGGCTCAAAACCGAAAAAATGAAGCTTGGTTTAAAGGATAAAGTTTCTTTTGTGTT  
TTCTCTCAGACTTATGGATAATGTGACCGGGTCTTATGCAAATTTTCTATTCTAAAA  
[G, C]  
TACTACTATGATATACAAGTGCTGTTGAGCATAATTAAATAAAATGCTGCTGCTTTGACA  
GTAAAGAGAAGGAAGTATTCTGATTAGCTGTATCTGGTATTAATTGCATGTTAAACACT  
GGAAATTTTAAATTTGAAATTAGATCAGTCATTCTTTTCTTTCTCAAGATATCTCATGG  
CTGACACTGAAGAAGAAATGTAATTCATAACTTGCACTAAATGTATATTTTTTTCTTAA  
AAATTTACCATTCTTATTTATATTTTATGGATTAAAAATTTATAAAATACAGATCAGTTA  
(SEQ ID NO:69)

63463 TGTGCCGTGTGGCTCAAAACCGAAAAACAATGAAGCTTGGTTTTAAAGGATAAAGTTTCT  
TTTTTGTTTTCTCTCAGACTTTATGGATAATGTGACCGGGTCTTATGCAAATTTTCTAT  
TTCTAAACTACTACTATGATATACAAGTGCTGTTGAGCATAATTAAATAAAATGCTGCT  
GCTTTGACAGTAAAGAGAAGGAAGTATTCTGATTAGCTGTATCTGGTATTAATTGCATGT  
TAAACACTGGAATTTTAAATTTGAAATTAGATCAGTCATTCTTTTCTTTCTCAAGAT  
[A, G]  
TCTCATGGCTGCACTGAAGAAGAAATGTAATTCATAACTTGCACTAAATGTATATTTTT  
TTTCTTAAAAATTTACCATTCTTATTTATATTTTTATGGATTAAAAATTTATAAAATACAG  
ATCAGTTAATATTGCACTTAAGTAATTTTACCTTTTAAATGTGATTTTATAGAATAATT  
CAGACTTACAAATACAGAGATATGAACAAAGTTTACAGTGGGAACAAAGGTTTAAAAAAA  
GGTTGTGGTTCTCTCTGTGATCCAGTGTGCACATAAACCTTTCTCTGATCTTCTACTG  
(SEQ ID NO:70)

63636 TGCTGCTGCTTTGACAGTAAAGAGAAGGAAGTATTCTGATTAGCTGTATCTGGTATTAAT  
TGCATGTTAAACACTGGAATTTTAAATTTGAAATTAGATCAGTCATTCTTTTCTTTTC  
TCAAGATATCTCATGGCTGCACTGAAGAAGAAATGTAATTCATAACTTGCACTAAATGT  
ATATTTTTTTTCTTAAAAATTTACCATTCTTATTTATATTTTTATGGATTAAAAATTTATA  
AAATACAGATCAGTTAATATTGCACTTAAGTAATTTTACCTTTTAAATGTGATTTTATA  
[G, A]  
AATAATTCAGACTTACAAATACAGAGATATGAACAAAGTTTACAGTGGGAACAAAGGTTT  
AAAAAAGGTTGTGGTTCTCTCTCTGTGATCCAGTGTGCACATAAACCTTTCTCTGATCT  
TTCACTGCCATCTCTGGATTATGTCTTCTGACCTGTCCATTTTGACCCATTAACCTGGAA

FIGURE 3BB



Attorney Docket No. CL001163

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Inventors: Wei SHAO et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

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AGTTGAAAACTACATTAACTGGAAAGTTGAAAACTACATTACTTTGGAGAATAAAACC  
GAAAGTTCGTGTATACCTTCTTAAAAAAAATCAAACCAAAAATGTGAAAACAATAGAA  
(SEQ ID NO:71)

63998

AAAAAAGGTTGTGGTTCTCTCTCTGTGATCCAGTGTGCACATAAACCTTTCTCTGATCTT  
TCACTGCCATCCTCTGGATTATGTCTTCTGACCTGTCCATTTTGACCCATTAAGTGGAAA  
GTTGAAAACTACATTAACTGGAAAGTTGAAAACTACATTACTTTGGAGAATAAAACCG  
AAAGTTCGTGTATACCTTCTTAAAAAAAATCAAACCAAAAATGTGAAAACAATAGAAT  
TGCAAAGATAGCAGTTAAAATTTTAATCTGAAAATAACCTTTGAATCTCGGGCTAGGTTA  
[T,C]  
GTCCATATTTGAAGTGGTCAGTGATGGTTTGAACATTTTTCAGGATGAGTTAAAATGC  
ACTGGATTATATTTGGGATTTTGTGTTTGGGAATTGTCTGTTTTAATCACAGCCTTAATT  
CACAAATTGGCAAAGGCAGTTTACTCAAAGGACTGGGCTAAATATTCTGTAATTATGCATT  
TTTGATAGGAAAATGAAATTTTGCAAACAGACATTTCTTTTTTTTGGCTGGAGTGCA  
GTGGGGCATGGTCTTGGCTCACTGCAGCGTTGACCACCTGGGCTCAAGTGATACTCCCGC  
(SEQ ID NO:72)

FIGURE 3CC